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Title 40—Protection of Environment

(This book contains part 60, § 60.1 to end of part 60 sections)

Part

CHAPTER I—Environmental Protection Agency (Continued) 60

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY (CONTINUED)

EDITORIAL NOTE: Nomenclature changes to chapter I appear at 65 FR 47324, 47325, Aug. 2, 2000; 66 FR 34375, 34376, June 28, 2001.

SUBCHAPTER C—AIR PROGRAMS (CONTINUED)

Part		*Page*
60	Standards of performance for new stationary sources	5

SUBCHAPTER C—AIR PROGRAMS (CONTINUED)

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart A—General Provisions

Sec.
60.1 Applicability.
60.2 Definitions.
60.3 Units and abbreviations.
60.4 Address.
60.5 Determination of construction or modification.
60.6 Review of plans.
60.7 Notification and record keeping.
60.8 Performance tests.
60.9 Availability of information.
60.10 State authority.
60.11 Compliance with standards and maintenance requirements.
60.12 Circumvention.
60.13 Monitoring requirements.
60.14 Modification.
60.15 Reconstruction.
60.16 Priority list.
60.17 Incorporations by reference.
60.18 General control device and work practice requirements.
60.19 General notification and reporting requirements.
TABLE 1 TO SUBPART A OF PART 60—DETECTION SENSITIVITY LEVELS (GRAMS PER HOUR)

Subpart B—Adoption and Submittal of State Plans for Designated Facilities

60.20 Applicability.
60.21 Definitions.
60.22 Publication of guideline documents, emission guidelines, and final compliance times.
60.23 Adoption and submittal of State plans; public hearings.
60.24 Emission standards and compliance schedules.
60.25 Emission inventories, source surveillance, reports.
60.26 Legal authority.
60.27 Actions by the Administrator.
60.28 Plan revisions by the State.
60.29 Plan revisions by the Administrator.

Subpart C—Emission Guidelines and Compliance Times

60.30 Scope.
60.31 Definitions.

Subpart Ca [Reserved]

Subpart Cb—Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors That Are Constructed on or Before September 20, 1994

60.30b Scope and delegation of authority.
60.31b Definitions.
60.32b Designated facilities.
60.33b Emission guidelines for municipal waste combustor metals, acid gases, organics, and nitrogen oxides.
60.34b Emission guidelines for municipal waste combustor operating practices.
60.35b Emission guidelines for municipal waste combustor operator training and certification.
60.36b Emission guidelines for municipal waste combustor fugitive ash emissions.
60.37b Emission guidelines for air curtain incinerators.
60.38b Compliance and performance testing.
60.39b Reporting and recordkeeping guidelines and compliance schedules.
TABLE 1 TO SUBPART Cb OF PART 60—NITROGEN OXIDES GUIDELINES FOR DESIGNATED FACILITIES
TABLE 2 TO SUBPART Cb OF PART 60—NITROGEN OXIDES LIMITS FOR EXISTING DESIGNATED FACILITIES INCLUDED IN AN EMISSIONS AVERAGING PLAN AT A MUNICIPAL WASTE COMBUSTOR PLANT
TABLE 3 TO SUBPART Cb OF PART 60—MUNICIPAL WASTE COMBUSTOR OPERATING GUIDELINES

Subpart Cc—Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

60.30c Scope.
60.31c Definitions.
60.32c Designated facilities.
60.33c Emission guidelines for municipal solid waste landfill emissions.
60.34c Test methods and procedures.
60.35c Reporting and recordkeeping guidelines.
60.36c Compliance times.

Subpart Cd—Emissions Guidelines and Compliance Times for Sulfuric Acid Production Units

60.30d Designated facilities.
60.31d Emissions guidelines.

60.32d Compliance times.

Subpart Ce—Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators

60.30e Scope.
60.31e Definitions.
60.32e Designated facilities.
60.33e Emission guidelines.
60.34e Operator training and qualification guidelines.
60.35e Waste management guidelines.
60.36e Inspection guidelines.
60.37e Compliance, performance testing, and monitoring guidelines.
60.38e Reporting and recordkeeping guidelines.
60.39e Compliance times.
TABLE 1A TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT DESIGNATED FACILITIES AS DEFINED IN § 60.32e(a)(1)
TABLE 1B TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT DESIGNATED FACILITIES AS DEFINED IN § 60.32e(a)(1) AND (a)(2)
TABLE 2A TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL HMIWI WHICH MEET THE CRITERIA UNDER § 60.33e(b)(1)
TABLE 2B TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL HMIWI WHICH MEET THE CRITERIA UNDER § 60.33e(b)(2)

Subpart D—Standards of Performance for Fossil-Fuel-Fired Steam Generators

60.40 Applicability and designation of affected facility.
60.41 Definitions.
60.42 Standard for particulate matter (PM).
60.43 Standard for sulfur dioxide (SO_2).
60.44 Standard for nitrogen oxides (NO_X).
60.45 Emission and fuel monitoring.
60.46 Test methods and procedures.

Subpart Da—Standards of Performance for Electric Utility Steam Generating Units

60.40Da Applicability and designation of affected facility.
60.41Da Definitions.
60.42Da Standard for particulate matter (PM).
60.43Da Standards for sulfur dioxide (SO_2).
60.44Da Standards for nitrogen oxides (NO_X).
60.45Da Alternative standards for combined nitrogen oxides (NO_X) and carbon monoxide (CO).
60.46Da [Reserved]
60.47Da Commercial demonstration permit.
60.48Da Compliance provisions.
60.49Da Emission monitoring.
60.50Da Compliance determination procedures and methods.
60.51Da Reporting requirements.
60.52Da Recordkeeping requirements.

Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

60.40b Applicability and delegation of authority.
60.41b Definitions.
60.42b Standard for sulfur dioxide (SO_2).
60.43b Standard for particulate matter (PM).
60.44b Standard for nitrogen oxides (NO_X).
60.45b Compliance and performance test methods and procedures for sulfur dioxide.
60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.
60.47b Emission monitoring for sulfur dioxide.
60.48b Emission monitoring for particulate matter and nitrogen oxides.
60.49b Reporting and recordkeeping requirements.

Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

60.40c Applicability and delegation of authority.
60.41c Definitions.
60.42c Standard for sulfur dioxide (SO_2).
60.43c Standard for particulate matter (PM).
60.44c Compliance and performance test methods and procedures for sulfur dioxide.
60.45c Compliance and performance test methods and procedures for particulate matter.
60.46c Emission monitoring for sulfur dioxide.
60.47c Emission monitoring for particulate matter.
60.48c Reporting and recordkeeping requirements.

Subpart Ea—Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After December 20, 1989 and on or Before September 20, 1994

60.50a Applicability and delegation of authority.
60.51a Definitions.
60.52a Standard for municipal waste combustor metals.
60.53a Standard for municipal waste combustor organics.
60.54a Standard for municipal waste combustor acid gases.
60.55a Standard for nitrogen oxides.
60.56a Standard for municipal waste combustor operating practices.

60.57a [Reserved]
60.58a Compliance and performance testing.
60.59a Reporting and recordkeeping requirements.

Subpart Eb—Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996

60.50b Applicability and delegation of authority.
60.51b Definitions.
60.52b Standards for municipal waste combustor metals, acid gases, organics, and nitrogen oxides.
60.53b Standards for municipal waste combustor operating practices.
60.54b Standards for municipal waste combustor operator training and certification.
60.55b Standards for municipal waste combustor fugitive ash emissions.
60.56b Standards for air curtain incinerators.
60.57b Siting requirements.
60.58b Compliance and performance testing.
60.59b Reporting and recordkeeping requirements.

Subpart Ec—Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators

60.50c Applicability and delegation of authority.
60.51c Definitions.
60.52c Emission limits.
60.53c Operator training and qualification requirements.
60.54c Siting requirements.
60.55c Waste management plan.
60.56c Compliance and performance testing.
60.57c Monitoring requirements.
60.58c Reporting and recordkeeping requirements.
TABLE 1 TO SUBPART Ec OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT AFFECTED FACILITIES AS DEFINED IN § 60.50c(a)(1) AND (2)
TABLE 1A TO SUBPART Ec OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT AFFECTED FACILITIES AS DEFINED IN § 60.50c(a)(1) AND (2)
TABLE 1B TO SUBPART Ec OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT AFFECTED FACILITIES AS DEFINED IN § 60.50c(a)(3) AND (4)
TABLE 2 TO SUBPART Ec—TOXIC EQUIVALENCY FACTORS
TABLE 3 TO SUBPART Ec—OPERATING PARAMETERS TO BE MONITORED AND MINIMUM MEASUREMENT AND RECORDING FREQUENCIES

Subpart F—Standards of Performance for Portland Cement Plants

60.60 Applicability and designation of affected facility.
60.61 Definitions.
60.62 Standard for particulate matter.
60.63 Monitoring of operations.
60.64 Test methods and procedures.
60.65 Recordkeeping and reporting requirements.
60.66 Delegation of authority.

Subpart G—Standards of Performance for Nitric Acid Plants

60.70 Applicability and designation of affected facility.
60.71 Definitions.
60.72 Standard for nitrogen oxides.
60.73 Emission monitoring.
60.74 Test methods and procedures.

Subpart Ga—Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011

60.70a Applicability and designation of affected facility.
60.71a Definitions.
60.72a Standards.
60.73a Emissions testing and monitoring.
60.74a Affirmative defense for violations of emission standards during malfunction.
60.75a Calculations.
60.76a Recordkeeping.
60.77a Reporting.

Subpart H—Standards of Performance for Sulfuric Acid Plants

60.80 Applicability and designation of affected facility.
60.81 Definitions.
60.82 Standard for sulfur dioxide.
60.83 Standard for acid mist.
60.84 Emission monitoring.
60.85 Test methods and procedures.

Subpart I—Standards of Performance for Hot Mix Asphalt Facilities

60.90 Applicability and designation of affected facility.
60.91 Definitions.
60.92 Standard for particulate matter.
60.93 Test methods and procedures.

Subpart J—Standards of Performance for Petroleum Refineries

60.100 Applicability, designation of affected facility, and reconstruction.
60.101 Definitions.
60.102 Standard for particulate matter.
60.103 Standard for carbon monoxide.

60.104 Standards for sulfur oxides.
60.105 Monitoring of emissions and operations.
60.106 Test methods and procedures.
60.107 Reporting and recordkeeping requirements.
60.108 Performance test and compliance provisions.
60.109 Delegation of authority.

Subpart Ja—Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

60.100a Applicability, designation of affected facility, and reconstruction.
60.101a Definitions.
60.102a Emissions limitations.
60.103a Design, equipment, work practice or operational standards.
60.104a Performance tests.
60.105a Monitoring of emissions and operations for fluid catalytic cracking units (FCCU) and fluid coking units (FCU).
60.106a Monitoring of emissions and operations for sulfur recovery plants.
60.107a Monitoring of emissions and operations for fuel gas combustion devices and flares.
60.108a Recordkeeping and reporting requirements.
60.109a Delegation of authority.
TABLE 1 TO SUBPART JA OF PART 60—TABLE 1 TO SUBPART JA OF PART 60—MOLAR EXHAUST VOLUMES AND MOLAR HEAT CONTENT OF FUEL GAS CONSTITUENTS

Subpart K—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978

60.110 Applicability and designation of affected facility.
60.111 Definitions.
60.112 Standard for volatile organic compounds (VOC).
60.113 Monitoring of operations.

Subpart Ka—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

60.110a Applicability and designation of affected facility.
60.111a Definitions.
60.112a Standard for volatile organic compounds (VOC).
60.113a Testing and procedures.
60.114a Alternative means of emission limitation.
60.115a Monitoring of operations.

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

60.110b Applicability and designation of affected facility.
60.111b Definitions.
60.112b Standard for volatile organic compounds (VOC).
60.113b Testing and procedures.
60.114b Alternative means of emission limitation.
60.115b Reporting and recordkeeping requirements.
60.116b Monitoring of operations.
60.117b Delegation of authority.

Subpart L—Standards of Performance for Secondary Lead Smelters

60.120 Applicability and designation of affected facility.
60.121 Definitions.
60.122 Standard for particulate matter.
60.123 Test methods and procedures.

Subpart M—Standards of Performance for Secondary Brass and Bronze Production Plants

60.130 Applicability and designation of affected facility.
60.131 Definitions.
60.132 Standard for particulate matter.
60.133 Test methods and procedures.

Subpart N—Standards of Performance for Primary Emissions from Basic Oxygen Process Furnances for Which Construction is Commenced After June 11, 1973

60.140 Applicability and designation of affected facility.
60.141 Definitions.
60.142 Standard for particulate matter.
60.143 Monitoring of operations.
60.144 Test methods and procedures.

Subpart Na—Standards of Performance for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983

60.140a Applicability and designation of affected facilities.
60.141a Definitions.
60.142a Standards for particulate matter.
60.143a Monitoring of operations.
60.144a Test methods and procedures.
60.145a Compliance provisions.

Subpart O—Standards of Performance for Sewage Treatment Plants

60.150 Applicability and designation of affected facility.
60.151 Definitions.
60.152 Standard for particulate matter.
60.153 Monitoring of operations.
60.154 Test methods and procedures.
60.155 Reporting.
60.156 Delegation of authority.

Subpart P—Standards of Performance for Primary Copper Smelters

60.160 Applicability and designation of affected facility.
60.161 Definitions.
60.162 Standard for particulate matter.
60.163 Standard for sulfur dioxide.
60.164 Standard for visible emissions.
60.165 Monitoring of operations.
60.166 Test methods and procedures.

Subpart Q—Standards of Performance for Primary Zinc Smelters

60.170 Applicability and designation of affected facility.
60.171 Definitions.
60.172 Standard for particulate matter.
60.173 Standard for sulfur dioxide.
60.174 Standard for visible emissions.
60.175 Monitoring of operations.
60.176 Test methods and procedures.

Subpart R—Standards of Performance for Primary Lead Smelters

60.180 Applicability and designation of affected facility.
60.181 Definitions.
60.182 Standard for particulate matter.
60.183 Standard for sulfur dioxide.
60.184 Standard for visible emissions.
60.185 Monitoring of operations.
60.186 Test methods and procedures.

Subpart S—Standards of Performance for Primary Aluminum Reduction Plants

60.190 Applicability and designation of affected facility.
60.191 Definitions.
60.192 Standard for fluorides.
60.193 Standard for visible emissions.
60.194 Monitoring of operations.
60.195 Test methods and procedures.

Subpart T—Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants

60.200 Applicability and designation of affected facility.
60.201 Definitions.
60.202 Standard for fluorides.
60.203 Monitoring of operations.
60.204 Test methods and procedures.

Subpart U—Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants

60.210 Applicability and designation of affected facility.
60.211 Definitions.
60.212 Standard for fluorides.
60.213 Monitoring of operations.
60.214 Test methods and procedures.

Subpart V—Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants

60.220 Applicability and designation of affected facility.
60.221 Definitions.
60.222 Standard for fluorides.
60.223 Monitoring of operations.
60.224 Test methods and procedures.

Subpart W—Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants

60.230 Applicability and designation of affected facility.
60.231 Definitions.
60.232 Standard for fluorides.
60.233 Monitoring of operations.
60.234 Test methods and procedures.

Subpart X—Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities

60.240 Applicability and designation of affected facility.
60.241 Definitions.
60.242 Standard for fluorides.
60.243 Monitoring of operations.
60.244 Test methods and procedures.

Subpart Y—Standards of Performance for Coal Preparation and Processing Plants

60.250 Applicability and designation of affected facility.
60.251 Definitions.
60.252 Standards for thermal dryers.
60.253 Standards for pneumatic coal-cleaning equipment.
60.254 Standards for coal processing and conveying equipment, coal storage systems, transfer and loading systems, and open storage piles.
60.255 Performance tests and other compliance requirements.
60.256 Continuous monitoring requirements.
60.257 Test methods and procedures.
60.258 Reporting and recordkeeping.

Subpart Z—Standards of Performance for Ferroalloy Production Facilities

60.260 Applicability and designation of affected facility.
60.261 Definitions.
60.262 Standard for particulate matter.
60.263 Standard for carbon monoxide.
60.264 Emission monitoring.
60.265 Monitoring of operations.
60.266 Test methods and procedures.

Subpart AA—Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983

60.270 Applicability and designation of affected facility.
60.271 Definitions.
60.272 Standard for particulate matter.
60.273 Emission monitoring.
60.274 Monitoring of operations.
60.275 Test methods and procedures.
60.276 Recordkeeping and reporting requirements.

Subpart AAa—Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983

60.270a Applicability and designation of affected facility.
60.271a Definitions.
60.272a Standard for particulate matter.
60.273a Emission monitoring.
60.274a Monitoring of operations.
60.275a Test methods and procedures.
60.276a Recordkeeping and reporting requirements.

Subpart BB—Standards of Performance for Kraft Pulp Mills

60.280 Applicability and designation of affected facility.
60.281 Definitions.
60.282 Standard for particulate matter.
60.283 Standard for total reduced sulfur (TRS).
60.284 Monitoring of emissions and operations.
60.285 Test methods and procedures.

Subpart CC—Standards of Performance for Glass Manufacturing Plants

60.290 Applicability and designation of affected facility.
60.291 Definitions.
60.292 Standards for particulate matter.
60.293 Standards for particulate matter from glass melting furnace with modified-processes.
60.294–60.295 [Reserved]
60.296 Test methods and procedures.

Subpart DD—Standards of Performance for Grain Elevators

60.300 Applicability and designation of affected facility.
60.301 Definitions.
60.302 Standard for particulate matter.
60.303 Test methods and procedures.
60.304 Modifications.

Subpart EE—Standards of Performance for Surface Coating of Metal Furniture

60.310 Applicability and designation of affected facility.
60.311 Definitions and symbols.
60.312 Standard for volatile organic compounds (VOC).
60.313 Performance tests and compliance provisions.
60.314 Monitoring of emissions and operations.
60.315 Reporting and recordkeeping requirements.
60.316 Test methods and procedures.

Subpart FF [Reserved]

Subpart GG—Standards of Performance for Stationary Gas Turbines

60.330 Applicability and designation of affected facility.
60.331 Definitions.
60.332 Standard for nitrogen oxides.
60.333 Standard for sulfur dioxide.
60.334 Monitoring of operations.
60.335 Test methods and procedures.

Subpart HH—Standards of Performance for Lime Manufacturing Plants

60.340 Applicability and designation of affected facility.
60.341 Definitions.
60.342 Standard for particulate matter.
60.343 Monitoring of emissions and operations.
60.344 Test methods and procedures.

Subpart KK—Standards of Performance for Lead-Acid Battery Manufacturing Plants

60.370 Applicability and designation of affected facility.
60.371 Definitions.
60.372 Standards for lead.
60.373 Monitoring of emissions and operations.
60.374 Test methods and procedures.

Subpart LL—Standards of Performance for Metallic Mineral Processing Plants

60.380 Applicability and designation of affected facility.
60.381 Definitions.

60.382 Standard for particulate matter.
60.383 Reconstruction.
60.384 Monitoring of operations.
60.385 Recordkeeping and reporting requirements.
60.386 Test methods and procedures.

Subpart MM—Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations

60.390 Applicability and designation of affected facility.
60.391 Definitions.
60.392 Standards for volatile organic compounds.
60.393 Performance test and compliance provisions.
60.394 Monitoring of emissions and operations.
60.395 Reporting and recordkeeping requirements.
60.396 Reference methods and procedures.
60.397 Modifications.
60.398 Innovative technology waivers.

Subpart NN—Standards of Performance for Phosphate Rock Plants

60.400 Applicability and designation of affected facility.
60.401 Definitions.
60.402 Standard for particulate matter.
60.403 Monitoring of emissions and operations.
60.404 Test methods and procedures.

Subpart PP—Standards of Performance for Ammonium Sulfate Manufacture

60.420 Applicability and designation of affected facility.
60.421 Definitions.
60.422 Standards for particulate matter.
60.423 Monitoring of operations.
60.424 Test methods and procedures.

Subpart QQ—Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing

60.430 Applicability and designation of affected facility.
60.431 Definitions and notations.
60.432 Standard for volatile organic compounds.
60.433 Performance test and compliance provisions.
60.434 Monitoring of operations and recordkeeping.
60.435 Test methods and procedures.

Subpart RR—Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

60.440 Applicability and designation of affected facility.
60.441 Definitions and symbols.
60.442 Standard for volatile organic compounds.
60.443 Compliance provisions.
60.444 Performance test procedures.
60.445 Monitoring of operations and recordkeeping.
60.446 Test methods and procedures.
60.447 Reporting requirements.

Subpart SS—Standards of Performance for Industrial Surface Coating: Large Appliances

60.450 Applicability and designation of affected facility.
60.451 Definitions.
60.452 Standard for volatile organic compounds.
60.453 Performance test and compliance provisions.
60.454 Monitoring of emissions and operations.
60.455 Reporting and recordkeeping requirements.
60.456 Test methods and procedures.

Subpart TT—Standards of Performance for Metal Coil Surface Coating

60.460 Applicability and designation of affected facility.
60.461 Definitions.
60.462 Standards for volatile organic compounds.
60.463 Performance test and compliance provisions.
60.464 Monitoring of emissions and operations.
60.465 Reporting and recordkeeping requirements.
60.466 Test methods and procedures.

Subpart UU—Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture

60.470 Applicability and designation of affected facilities.
60.471 Definitions.
60.472 Standards for particulate matter.
60.473 Monitoring of operations.

60.474 Test methods and procedures.

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

60.480 Applicability and designation of affected facility.
60.481 Definitions.
60.482–1 Standards: General.
60.482–2 Standards: Pumps in light liquid service.
60.482–3 Standards: Compressors.
60.482–4 Standards: Pressure relief devices in gas/vapor service.
60.482–5 Standards: Sampling connection systems.
60.482–6 Standards: Open-ended valves or lines.
60.482–7 Standards: Valves in gas/vapor service and in light liquid service.
60.482–8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.
60.482–9 Standards: Delay of repair.
60.482–10 Standards: Closed vent systems and control devices.
60.483–1 Alternative standards for valves—allowable percentage of valves leaking.
60.483–2 Alternative standards for valves—skip period leak detection and repair.
60.484 Equivalence of means of emission limitation.
60.485 Test methods and procedures.
60.486 Recordkeeping requirements.
60.487 Reporting requirements.
60.488 Reconstruction.
60.489 List of chemicals produced by affected facilities.

Subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

60.480a Applicability and designation of affected facility.
60.481a Definitions.
60.482–1a Standards: General.
60.482–2a Standards: Pumps in light liquid service.
60.482–3a Standards: Compressors.
60.482–4a Standards: Pressure relief devices in gas/vapor service.
60.482–5a Standards: Sampling connection systems.
60.482–6a Standards: Open-ended valves or lines.
60.482–7a Standards: Valves in gas/vapor service and in light liquid service.
60.482–8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service.
60.482–9a Standards: Delay of repair.
60.482–10a Standards: Closed vent systems and control devices.
60.482–11a Standards: Connectors in gas/vapor service and in light liquid service.
60.483–1a Alternative standards for valves—allowable percentage of valves leaking.
60.483–2a Alternative standards for valves—skip period leak detection and repair.
60.484a Equivalence of means of emission limitation.
60.485a Test methods and procedures.
60.486a Recordkeeping requirements.
60.487a Reporting requirements.
60.488a Reconstruction.
60.489a List of chemicals produced by affected facilities.

Subpart WW—Standards of Performance for the Beverage Can Surface Coating Industry

60.490 Applicability and designation of affected facility.
60.491 Definitions.
60.492 Standards for volatile organic compounds.
60.493 Performance test and compliance provisions.
60.494 Monitoring of emissions and operations.
60.495 Reporting and recordkeeping requirements.
60.496 Test methods and procedures.

Subpart XX—Standards of Performance for Bulk Gasoline Terminals

60.500 Applicability and designation of affected facility.
60.501 Definitions.
60.502 Standards for Volatile Organic Compound (VOC) emissions from bulk gasoline terminals.
60.503 Test methods and procedures.
60.504 [Reserved]
60.505 Reporting and recordkeeping.
60.506 Reconstruction.

Subpart AAA—Standards of Performance for New Residential Wood Heaters

60.530 Applicability and designation of affected facility.
60.531 Definitions.
60.532 Standards for particulate matter.
60.533 Compliance and certification.
60.534 Test methods and procedures.
60.535 Laboratory accreditation.
60.536 Permanent label, temporary label, and owner's manual.

60.537 Reporting and recordkeeping.
60.538 Prohibitions.
60.539 Hearing and appeal procedures.
60.539a Delegation of authority.
60.539b General provisions exclusions.

Subpart BBB—Standards of Performance for the Rubber Tire Manufacturing Industry

60.540 Applicability and designation of affected facilities.
60.541 Definitions.
60.542 Standards for volatile organic compounds.
60.542a Alternate standard for volatile organic compounds.
60.543 Performance test and compliance provisions.
60.544 Monitoring of operations.
60.545 Recordkeeping requirements.
60.546 Reporting requirements.
60.547 Test methods and procedures.
60.548 Delegation of authority.

Subpart CCC [Reserved]

Subpart DDD—Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry

60.560 Applicability and designation of affected facilities.
60.561 Definitions.
60.562–1 Standards: Process emissions.
60.562–2 Standards: Equipment leaks of VOC.
60.563 Monitoring requirements.
60.564 Test methods and procedures.
60.565 Reporting and recordkeeping requirements.
60.566 Delegation of authority.

Subpart EEE [Reserved]

Subpart FFF—Standards of Performance for Flexible Vinyl and Urethane Coating and Printing

60.580 Applicability and designation of affected facility.
60.581 Definitions and symbols.
60.582 Standard for volatile organic compounds.
60.583 Test methods and procedures.
60.584 Monitoring of operations and recordkeeping requirements.
60.585 Reporting requirements.

Subpart GGG—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

60.590 Applicability and designation of affected facility.
60.591 Definitions.
60.592 Standards.
60.593 Exceptions.

Subpart GGGa—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

60.590a Applicability and designation of affected facility.
60.591a Definitions.
60.592a Standards.
60.593a Exceptions.

Subpart HHH—Standards of Performance for Synthetic Fiber Production Facilities

60.600 Applicability and designation of affected facility.
60.601 Definitions.
60.602 Standard for volatile organic compounds.
60.603 Performance test and compliance provisions.
60.604 Reporting requirements.

Subpart III—Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes

60.610 Applicability and designation of affected facility.
60.611 Definitions.
60.612 Standards.
60.613 Monitoring of emissions and operations.
60.614 Test methods and procedures.
60.615 Reporting and recordkeeping requirements.
60.616 Reconstruction.
60.617 Chemicals affected by subpart III.
60.618 Delegation of authority.

Subpart JJJ—Standards of Performance for Petroleum Dry Cleaners

60.620 Applicability and designation of affected facility.
60.621 Definitions.
60.622 Standards for volatile organic compounds.

60.623 Equivalent equipment and procedures.
60.624 Test methods and procedures.
60.625 Recordkeeping requirements.

Subpart KKK—Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

60.630 Applicability and designation of affected facility.
60.631 Definitions.
60.632 Standards.
60.633 Exceptions.
60.634 Alternative means of emission limitation.
60.635 Recordkeeping requirements.
60.636 Reporting requirements.

Subpart LLL—Standards of Performance for SO_2 Emissions From Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

60.640 Applicability and designation of affected facilities.
60.641 Definitions.
60.642 Standards for sulfur dioxide.
60.643 Compliance provisions.
60.644 Test methods and procedures.
60.645 [Reserved]
60.646 Monitoring of emissions and operations.
60.647 Recordkeeping and reporting requirements.
60.648 Optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure.

Subpart MMM [Reserved]

Subpart NNN—Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

60.660 Applicability and designation of affected facility.
60.661 Definitions.
60.662 Standards.
60.663 Monitoring of emissions and operations.
60.664 Test methods and procedures.
60.665 Reporting and recordkeeping requirements.
60.666 Reconstruction.
60.667 Chemicals affected by subpart NNN.
60.668 Delegation of authority.

Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

60.670 Applicability and designation of affected facility.
60.671 Definitions.
60.672 Standard for particulate matter (PM).
60.673 Reconstruction.
60.674 Monitoring of operations.
60.675 Test methods and procedures.
60.676 Reporting and recordkeeping.
TABLE 1 TO SUBPART OOO OF PART 60—EXCEPTIONS TO APPLICABILITY OF SUBPART A TO SUBPART OOO
TABLE 2 TO SUBPART OOO OF PART 60—STACK EMISSION LIMITS FOR AFFECTED FACILITIES WITH CAPTURE SYSTEMS
TABLE 3 TO SUBPART OOO OF PART 60—FUGITIVE EMISSION LIMITS

Subpart PPP—Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants

60.680 Applicability and designation of affected facility.
60.681 Definitions.
60.682 Standard for particulate matter.
60.683 Monitoring of operations.
60.684 Recordkeeping and reporting requirements.
60.685 Test methods and procedures.

Subpart QQQ—Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

60.690 Applicability and designation of affected facility.
60.691 Definitions.
60.692–1 Standards: General.
60.692–2 Standards: Individual drain systems.
60.692–3 Standards: Oil-water separators.
60.692–4 Standards: Aggregate facility.
60.692–5 Standards: Closed vent systems and control devices.
60.692–6 Standards: Delay of repair.
60.692–7 Standards: Delay of compliance.
60.693–1 Alternative standards for individual drain systems.
60.693–2 Alternative standards for oil-water separators.
60.694 Permission to use alternative means of emission limitation.
60.695 Monitoring of operations.
60.696 Performance test methods and procedures and compliance provisions.
60.697 Recordkeeping requirements.
60.698 Reporting requirements.

60.699 Delegation of authority.

Subpart RRR—Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

60.700 Applicability and designation of affected facility.
60.701 Definitions.
60.702 Standards.
60.703 Monitoring of emissions and operations.
60.704 Test methods and procedures.
60.705 Reporting and recordkeeping requirements.
60.706 Reconstruction.
60.707 Chemicals affected by subpart RRR.
60.708 Delegation of authority.

Subpart SSS—Standards of Performance for Magnetic Tape Coating Facilities

60.710 Applicability and designation of affected facility.
60.711 Definitions, symbols, and cross-reference tables.
60.712 Standards for volatile organic compounds.
60.713 Compliance provisions.
60.714 Installation of monitoring devices and recordkeeping.
60.715 Test methods and procedures.
60.716 Permission to use alternative means of emission limitation.
60.717 Reporting and monitoring requirements.
60.718 Delegation of authority.

Subpart TTT—Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines

60.720 Applicability and designation of affected facility.
60.721 Definitions.
60.722 Standards for volatile organic compounds.
60.723 Performance test and compliance provisions.
60.724 Reporting and recordkeeping requirements.
60.725 Test methods and procedures.
60.726 Delegation of authority.

Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

60.730 Applicability and designation of affected facility.
60.731 Definitions.
60.732 Standards for particulate matter.
60.733 Reconstruction.
60.734 Monitoring of emissions and operations.
60.735 Recordkeeping and reporting requirements.
60.736 Test methods and procedures.
60.737 Delegation of authority.

Subpart VVV—Standards of Performance for Polymeric Coating of Supporting Substrates Facilities

60.740 Applicability and designation of affected facility.
60.741 Definitions, symbols, and cross-reference tables.
60.742 Standards for volatile organic compounds.
60.743 Compliance provisions.
60.744 Monitoring requirements.
60.745 Test methods and procedures.
60.746 Permission to use alternative means of emission limitation.
60.747 Reporting and recordkeeping requirements.
60.748 Delegation of authority.

Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

60.750 Applicability, designation of affected facility, and delegation of authority.
60.751 Definitions.
60.752 Standards for air emissions from municipal solid waste landfills.
60.753 Operational standards for collection and control systems.
60.754 Test methods and procedures.
60.755 Compliance provisions.
60.756 Monitoring of operations.
60.757 Reporting requirements.
60.758 Recordkeeping requirements.
60.759 Specifications for active collection systems.

Subpart AAAA—Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001

INTRODUCTION

60.1000 What does this subpart do?
60.1005 When does this subpart become effective?

APPLICABILITY

60.1010 Does this subpart apply to my municipal waste combustion unit?
60.1015 What is a new municipal waste combustion unit?
60.1020 Does this subpart allow any exemptions?
60.1025 Do subpart E new source performance standards also apply to my municipal waste combustion unit?
60.1030 Can the Administrator delegate authority to enforce these Federal new

source performance standards to a State agency?
60.1035 How are these new source performance standards structured?
60.1040 Do all five components of these new source performance standards apply at the same time?
60.1045 Are there different subcategories of small municipal waste combustion units within this subpart?

PRECONSTRUCTION REQUIREMENTS: MATERIALS SEPARATION PLAN

60.1050 Who must submit a materials separation plan?
60.1055 What is a materials separation plan?
60.1060 What steps must I complete for my materials separation plan?
60.1065 What must I include in my draft materials separation plan?
60.1070 How do I make my draft materials separation plan available to the public?
60.1075 When must I accept comments on the materials separation plan?
60.1080 Where and when must I hold a public meeting on my draft materials separation plan?
60.1085 What must I do with any public comments I receive during the public comment period on my draft materials separation plan?
60.1090 What must I do with my revised materials separation plan?
60.1095 What must I include in the public meeting on my revised materials separation plan?
60.1100 What must I do with any public comments I receive on my revised materials separation plan?
60.1105 How do I submit my final materials separation plan?

PRECONSTRUCTION REQUIREMENTS: SITING ANALYSIS

60.1110 Who must submit a siting analysis?
60.1115 What is a siting analysis?
60.1120 What steps must I complete for my siting analysis?
60.1125 What must I include in my siting analysis?
60.1130 How do I make my siting analysis available to the public?
60.1135 When must I accept comments on the siting analysis and revised materials separation plan?
60.1140 Where and when must I hold a public meeting on the siting analysis?
60.1145 What must I do with any public comments I receive during the public comment period on my siting analysis?
60.1150 How do I submit my siting analysis?

GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

60.1155 What types of training must I do?
60.1160 Who must complete the operator training course? By when?
60.1165 Who must complete the plant-specific training course?
60.1170 What plant-specific training must I provide?
60.1175 What information must I include in the plant-specific operating manual?
60.1180 Where must I keep the plant-specific operating manual?

GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

60.1185 What types of operator certification must the chief facility operator and shift supervisor obtain and by when must they obtain it?
60.1190 After the required date for operator certification, who may operate the municipal waste combustion unit?
60.1195 What if all the certified operators must be temporarily offsite?

GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

60.1200 What are the operating practice requirements for my municipal waste combustion unit?
60.1205 What happens to the operating requirements during periods of startup, shutdown, and malfunction?

EMISSION LIMITS

60.1210 What pollutants are regulated by this subpart?
60.1215 What emission limits must I meet? By when?
60.1220 What happens to the emission limits during periods of startup, shutdown, and malfunction?

CONTINUOUS EMISSION MONITORING

60.1225 What types of continuous emission monitoring must I perform?
60.1230 What continuous emission monitoring systems must I install for gaseous pollutants?
60.1235 How are the data from the continuous emission monitoring systems used?
60.1240 How do I make sure my continuous emission monitoring systems are operating correctly?
60.1245 Am I exempt from any appendix B or appendix F requirements to evaluate continuous emission monitoring systems?
60.1250 What is my schedule for evaluating continuous emission monitoring systems?
60.1255 What must I do if I choose to monitor carbon dioxide instead of oxygen as a diluent gas?
60.1260 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems

and is the data collection requirement enforceable?
60.1265 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?
60.1270 What is required for my continuous opacity monitoring system and how are the data used?
60.1275 What additional requirements must I meet for the operation of my continuous emission monitoring systems and continuous opacity monitoring system?
60.1280 What must I do if any of my continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements?

STACK TESTING

60.1285 What types of stack tests must I conduct?
60.1290 How are the stack test data used?
60.1295 What schedule must I follow for the stack testing?
60.1300 What test methods must I use to stack test?
60.1305 May I conduct stack testing less often?
60.1310 May I deviate from the 13-month testing schedule if unforeseen circumstances arise?

OTHER MONITORING REQUIREMENTS

60.1315 Must I meet other requirements for continuous monitoring?
60.1320 How do I monitor the load of my municipal waste combustion unit?
60.1325 How do I monitor the temperature of flue gases at the inlet of my particulate matter control device?
60.1330 How do I monitor the injection rate of activated carbon?
60.1335 What is the minimum amount of monitoring data I must collect with my continuous parameter monitoring systems and is the data collection requirement enforceable?

RECORDKEEPING

60.1340 What records must I keep?
60.1345 Where must I keep my records and for how long?
60.1350 What records must I keep for the materials separation plan and siting analysis?
60.1355 What records must I keep for operator training and certification?
60.1360 What records must I keep for stack tests?
60.1365 What records must I keep for continuously monitored pollutants or parameters?
60.1370 What records must I keep for municipal waste combustion units that use activated carbon?

REPORTING

60.1375 What reports must I submit before I submit my notice of construction?
60.1380 What must I include in my notice of construction?
60.1385 What reports must I submit after I submit my notice of construction and in what form?
60.1390 What are the appropriate units of measurement for reporting my data?
60.1395 When must I submit the initial report?
60.1400 What must I include in my initial report?
60.1405 When must I submit the annual report?
60.1410 What must I include in my annual report?
60.1415 What must I do if I am out of compliance with the requirements of this subpart?
60.1420 If a semiannual report is required, when must I submit it?
60.1425 What must I include in the semiannual out-of-compliance reports?
60.1430 Can reporting dates be changed?

AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

60.1435 What is an air curtain incinerator?
60.1440 What is yard waste?
60.1445 What are the emission limits for air curtain incinerators that burn 100 percent yard waste?
60.1450 How must I monitor opacity for air curtain incinerators that burn 100 percent yard waste?
60.1455 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent yard waste?

EQUATIONS

60.1460 What equations must I use?

DEFINITIONS

60.1465 What definitions must I know?

TABLE 1 TO SUBPART AAAA OF PART 60—EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS
TABLE 2 TO SUBPART AAAA OF PART 60—CARBON MONOXIDE EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS
TABLE 3 TO SUBPART AAAA OF PART 60—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)
TABLE 4 TO SUBPART AAAA OF PART 60—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

TABLE 5 TO SUBPART AAAA OF PART 60—REQUIREMENTS FOR STACK TESTS

Subpart BBBB—Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999

INTRODUCTION

60.1500 What is the purpose of this subpart?
60.1505 Am I affected by this subpart?
60.1510 Is a State plan required for all States?
60.1515 What must I include in my State plan?
60.1520 Is there an approval process for my State plan?
60.1525 What if my State plan is not approvable?
60.1530 Is there an approval process for a negative declaration letter?
60.1535 What compliance schedule must I include in my State plan?
60.1540 Are there any State plan requirements for this subpart that supersede the requirements specified in subpart B?
60.1545 Does this subpart directly affect municipal waste combustion unit owners and operators in my State?

APPLICABILITY OF STATE PLANS

60.1550 What municipal waste combustion units must I address in my State plan?
60.1555 Are any small municipal waste combustion units exempt from my State plan?
60.1560 Can an affected municipal waste combustion unit reduce its capacity to less than 35 tons per day rather than comply with my State plan?
60.1565 What subcategories of small municipal waste combustion units must I include in my State plan?

USE OF MODEL RULE

60.1570 What is the ''model rule'' in this subpart?
60.1575 How does the model rule relate to the required elements of my State plan?
60.1580 What are the principal components of the model rule?

MODEL RULE—INCREMENTS OF PROGRESS

60.1585 What are my requirements for meeting increments of progress and achieving final compliance?
60.1590 When must I complete each increment of progress?
60.1595 What must I include in the notifications of achievement of my increments of progress?
60.1600 When must I submit the notifications of achievement of increments of progress?
60.1605 What if I do not meet an increment of progress?
60.1610 How do I comply with the increment of progress for submittal of a control plan?
60.1615 How do I comply with the increment of progress for awarding contracts?
60.1620 How do I comply with the increment of progress for initiating onsite construction?
60.1625 How do I comply with the increment of progress for completing onsite construction?
60.1630 How do I comply with the increment of progress for achieving final compliance?
60.1635 What must I do if I close my municipal waste combustion unit and then restart my municipal waste combustion unit?
60.1640 What must I do if I plan to permanently close my municipal waste combustion unit and not restart it?

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

60.1645 What types of training must I do?
60.1650 Who must complete the operator training course? By when?
60.1655 Who must complete the plant-specific training course?
60.1660 What plant-specific training must I provide?
60.1665 What information must I include in the plant-specific operating manual?
60.1670 Where must I keep the plant-specific operating manual?

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

60.1675 What types of operator certification must the chief facility operator and shift supervisor obtain and by when must they obtain it?
60.1680 After the required date for operator certification, who may operate the municipal waste combustion unit?
60.1685 What if all the certified operators must be temporarily offsite?

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

60.1690 What are the operating practice requirements for my municipal waste combustion unit?
60.1695 What happens to the operating requirements during periods of startup, shutdown, and malfunction?

MODEL RULE—EMISSION LIMITS

60.1700 What pollutants are regulated by this subpart?
60.1705 What emission limits must I meet? By when?
60.1710 What happens to the emission limits during periods of startup, shutdown, and malfunction?

MODEL RULE—CONTINUOUS EMISSION MONITORING

60.1715 What types of continuous emission monitoring must I perform?
60.1720 What continuous emission monitoring systems must I install for gaseous pollutants?
60.1725 How are the data from the continuous emission monitoring systems used?
60.1730 How do I make sure my continuous emission monitoring systems are operating correctly?
60.1735 Am I exempt from any appendix B or appendix F requirements to evaluate continuous emission monitoring systems?
60.1740 What is my schedule for evaluating continuous emission monitoring systems?
60.1745 What must I do if I choose to monitor carbon dioxide instead of oxygen as a diluent gas?
60.1750 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems and is the data collection requirement enforceable?
60.1755 How do I convert my 1-hour arithmetic averages into appropriate averaging times and units?
60.1760 What is required for my continuous opacity monitoring system and how are the data used?
60.1765 What additional requirements must I meet for the operation of my continuous emission monitoring systems and continuous opacity monitoring system?
60.1770 What must I do if any of my continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements?

MODEL RULE—STACK TESTING

60.1775 What types of stack tests must I conduct?
60.1780 How are the stack test data used?
60.1785 What schedule must I follow for the stack testing?
60.1790 What test methods must I use to stack test?
60.1795 May I conduct stack testing less often?
60.1800 May I deviate from the 13-month testing schedule if unforeseen circumstances arise?

MODEL RULE—OTHER MONITORING REQUIREMENTS

60.1805 Must I meet other requirements for continuous monitoring?
60.1810 How do I monitor the load of my municipal waste combustion unit?
60.1815 How do I monitor the temperature of flue gases at the inlet of my particulate matter control device?
60.1820 How do I monitor the injection rate of activated carbon?
60.1825 What is the minimum amount of monitoring data I must collect with my continuous parameter monitoring systems and is the data collection requirement enforceable?

MODEL RULE—RECORDKEEPING

60.1830 What records must I keep?
60.1835 Where must I keep my records and for how long?
60.1840 What records must I keep for operator training and certification?
60.1845 What records must I keep for stack tests?
60.1850 What records must I keep for continuously monitored pollutants or parameters?
60.1855 What records must I keep for municipal waste combustion units that use activated carbon?

MODEL RULE—REPORTING

60.1860 What reports must I submit and in what form?
60.1865 What are the appropriate units of measurement for reporting my data?
60.1870 When must I submit the initial report?
60.1875 What must I include in my initial report?
60.1880 When must I submit the annual report?
60.1885 What must I include in my annual report?
60.1890 What must I do if I am out of compliance with the requirements of this subpart?
60.1895 If a semiannual report is required, when must I submit it?
60.1900 What must I include in the semiannual out-of-compliance reports?
60.1905 Can reporting dates be changed?

MODEL RULE—AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

60.1910 What is an air curtain incinerator?
60.1915 What is yard waste?
60.1920 What are the emission limits for air curtain incinerators that burn 100 percent yard waste?
60.1925 How must I monitor opacity for air curtain incinerators that burn 100 percent yard waste?
60.1930 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent yard waste?

EQUATIONS

60.1935 What equations must I use?

DEFINITIONS

60.1940 What definitions must I know?

TABLE 1 TO SUBPART BBBB OF PART 60—MODEL RULE—COMPLIANCE SCHEDULES AND INCREMENTS OF PROGRESS
TABLE 2 TO SUBPART BBBB OF PART 60—MODEL RULE—CLASS I EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS
TABLE 3 TO SUBPART BBBB OF PART 60—MODEL RULE—CLASS I NITROGEN OXIDES EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS
TABLE 4 TO SUBPART BBBB OF PART 60—MODEL RULE—CLASS II EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS
TABLE 5 TO SUBPART BBBB OF PART 60—MODEL RULE—CARBON MONOXIDE EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS
TABLE 6 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)
TABLE 7 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)
TABLE 8 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR STACK TESTS

Subpart CCCC—Standards of Performance for Commercial and Industrial Solid Waste Incineration Units

INTRODUCTION

60.2000 What does this subpart do?
60.2005 When does this subpart become effective?

APPLICABILITY

60.2010 Does this subpart apply to my incineration unit?
60.2015 What is a new incineration unit?
60.2020 What combustion units are exempt from this subpart?
60.2030 Who implements and enforces this subpart?
60.2035 How are these new source performance standards structured?
60.2040 Do all eleven components of the new source performance standards apply at the same time?

PRECONSTRUCTION SITING ANALYSIS

60.2045 Who must prepare a siting analysis?
60.2050 What is a siting analysis?

WASTE MANAGEMENT PLAN

60.2055 What is a waste management plan?
60.2060 When must I submit my waste management plan?
60.2065 What should I include in my waste management plan?

OPERATOR TRAINING AND QUALIFICATION

60.2070 What are the operator training and qualification requirements?
60.2075 When must the operator training course be completed?
60.2080 How do I obtain my operator qualification?
60.2085 How do I maintain my operator qualification?
60.2090 How do I renew my lapsed operator qualification?
60.2095 What site-specific documentation is required?
60.2100 What if all the qualified operators are temporarily not accessible?

EMISSION LIMITATIONS AND OPERATING LIMITS

60.2105 What emission limitations must I meet and by when?
60.2110 What operating limits must I meet and by when?
60.2115 What if I do not use a wet scrubber to comply with the emission limitations?
60.2120 What happens during periods of startup, shutdown, and malfunction?

PERFORMANCE TESTING

60.2125 How do I conduct the initial and annual performance test?
60.2130 How are the performance test data used?

INITIAL COMPLIANCE REQUIREMENTS

60.2135 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?
60.2140 By what date must I conduct the initial performance test?
60.2141 By what date must I conduct the initial air pollution control device inspection?

CONTINUOUS COMPLIANCE REQUIREMENTS

60.2145 How do I demonstrate continuous compliance with the emission limitations and the operating limits?
60.2150 By what date must I conduct the annual performance test?
60.2151 By what date must I conduct the annual air pollution control device inspection?
60.2155 May I conduct performance testing less often?
60.2160 May I conduct a repeat performance test to establish new operating limits?

MONITORING

60.2165 What monitoring equipment must I install and what parameters must I monitor?
60.2170 Is there a minimum amount of monitoring data I must obtain?

RECORDKEEPING AND REPORTING

60.2175 What records must I keep?

60.2180 Where and in what format must I keep my records?
60.2185 What reports must I submit?
60.2190 What must I submit prior to commencing construction?
60.2195 What information must I submit prior to initial startup?
60.2200 What information must I submit following my initial performance test?
60.2205 When must I submit my annual report?
60.2210 What information must I include in my annual report?
60.2215 What else must I report if I have a deviation from the operating limits or the emission limitations?
60.2220 What must I include in the deviation report?
60.2225 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?
60.2230 Are there any other notifications or reports that I must submit?
60.2235 In what form can I submit my reports?
60.2240 Can reporting dates be changed?

TITLE V OPERATING PERMITS

60.2242 Am I required to apply for and obtain a title V operating permit for my unit?

AIR CURTAIN INCINERATORS

60.2245 What is an air curtain incinerator?
60.2250 What are the emission limitations for air curtain incinerators?
60.2255 How must I monitor opacity for air curtain incinerators?
60.2260 What are the recordkeeping and reporting requirements for air curtain incinerators?

DEFINITIONS

60.2265 What definitions must I know?
TABLE 1 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS
TABLE 2 TO SUBPART CCCC OF PART 60—OPERATING LIMITS FOR WET SCRUBBERS
TABLE 3 TO SUBPART CCCC OF PART 60—TOXIC EQUIVALENCY FACTORS
TABLE 4 TO SUBPART CCCC OF PART 60—SUMMARY OF REPORTING REQUIREMENTS
TABLE 5 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR INCINERATORS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011
TABLE 6 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR ENERGY RECOVERY UNITS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011
TABLE 7 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR WASTE-BURNING KILNS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011
TABLE 8 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR SMALL, REMOTE INCINERATORS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011

Subpart DDDD—Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units

INTRODUCTION

60.2500 What is the purpose of this subpart?
60.2505 Am I affected by this subpart?
60.2510 Is a State plan required for all States?
60.2515 What must I include in my State plan?
60.2520 Is there an approval process for my State plan?
60.2525 What if my State plan is not approvable?
60.2530 Is there an approval process for a negative declaration letter?
60.2535 What compliance schedule must I include in my State plan?
60.2540 Are there any State plan requirements for this subpart that apply instead of the requirements specified in subpart B?
60.2541 In lieu of a state plan submittal, are there other acceptable option(s) for a state to meet its Clean Air Act section 111(d)/129(b)(2) obligations?
60.2542 What authorities will not be delegated to state, local, or tribal agencies?
60.2545 Does this subpart directly affect CISWI unit owners and operators in my State?

APPLICABILITY OF STATE PLANS

60.2550 What CISWI units must I address in my State plan?
60.2555 What combustion units are exempt from my State plan?

USE OF MODEL RULE

60.2560 What is the ''model rule'' in this subpart?
60.2565 How does the model rule relate to the required elements of my State plan?
60.2570 What are the principal components of the model rule?

MODEL RULE—INCREMENTS OF PROGRESS

60.2575 What are my requirements for meeting increments of progress and achieving final compliance?
60.2580 When must I complete each increment of progress?

60.2585 What must I include in the notifications of achievement of increments of progress?
60.2590 When must I submit the notifications of achievement of increments of progress?
60.2595 What if I do not meet an increment of progress?
60.2600 How do I comply with the increment of progress for submittal of a control plan?
60.2605 How do I comply with the increment of progress for achieving final compliance?
60.2610 What must I do if I close my CISWI unit and then restart it?
60.2615 What must I do if I plan to permanently close my CISWI unit and not restart it?

MODEL RULE—WASTE MANAGEMENT PLAN

60.2620 What is a waste management plan?
60.2625 When must I submit my waste management plan?
60.2630 What should I include in my waste management plan?

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

60.2635 What are the operator training and qualification requirements?
60.2640 When must the operator training course be completed?
60.2645 How do I obtain my operator qualification?
60.2650 How do I maintain my operator qualification?
60.2655 How do I renew my lapsed operator qualification?
60.2660 What site-specific documentation is required?
60.2665 What if all the qualified operators are temporarily not accessible?

MODEL RULE—EMISSION LIMITATIONS AND OPERATING LIMITS

60.2670 What emission limitations must I meet and by when?
60.2675 What operating limits must I meet and by when?
60.2680 What if I do not use a wet scrubber, fabric filter, activated carbon injection, selective noncatalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations?
60.2685 Affirmative defense for violation of emission standards during malfunction.

MODEL RULE—PERFORMANCE TESTING

60.2690 How do I conduct the initial and annual performance test?
60.2695 How are the performance test data used?

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

60.2700 How do I demonstrate initial compliance with the amended emission limitations and establish the operating limits?
60.2705 By what date must I conduct the initial performance test?
60.2706 By what date must I conduct the initial air pollution control device inspection?

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

60.2710 How do I demonstrate continuous compliance with the amended emission limitations and the operating limits?
60.2715 By what date must I conduct the annual performance test?
60.2716 By what date must I conduct the annual air pollution control device inspection?
60.2720 May I conduct performance testing less often?
60.2725 May I conduct a repeat performance test to establish new operating limits?

MODEL RULE—MONITORING

60.2730 What monitoring equipment must I install and what parameters must I monitor?
60.2735 Is there a minimum amount of monitoring data I must obtain?

MODEL RULE—RECORDKEEPING AND REPORTING

60.2740 What records must I keep?
60.2745 Where and in what format must I keep my records?
60.2750 What reports must I submit?
60.2755 When must I submit my waste management plan?
60.2760 What information must I submit following my initial performance test?
60.2765 When must I submit my annual report?
60.2770 What information must I include in my annual report?
60.2775 What else must I report if I have a deviation from the operating limits or the emission limitations?
60.2780 What must I include in the deviation report?
60.2785 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?
60.2790 Are there any other notifications or reports that I must submit?
60.2795 In what form can I submit my reports?
60.2800 Can reporting dates be changed?

MODEL RULE—TITLE V OPERATING PERMITS

60.2805 Am I required to apply for and obtain a Title V operating permit for my unit?

MODEL RULE—AIR CURTAIN INCINERATORS

60.2810 What is an air curtain incinerator?
60.2815 What are my requirements for meeting increments of progress and achieving final compliance?
60.2820 When must I complete each increment of progress?
60.2825 What must I include in the notifications of achievement of increments of progress?
60.2830 When must I submit the notifications of achievement of increments of progress?
60.2835 What if I do not meet an increment of progress?
60.2840 How do I comply with the increment of progress for submittal of a control plan?
60.2845 How do I comply with the increment of progress for achieving final compliance?
60.2850 What must I do if I close my air curtain incinerator and then restart it?
60.2855 What must I do if I plan to permanently close my air curtain incinerator and not restart it?
60.2860 What are the emission limitations for air curtain incinerators?
60.2865 How must I monitor opacity for air curtain incinerators?
60.2870 What are the recordkeeping and reporting requirements for air curtain incinerators?

MODEL RULE—DEFINITIONS

60.2875 What definitions must I know?
TABLE 1 TO SUBPART DDDD OF PART 60—MODEL RULE—INCREMENTS OF PROGRESS AND COMPLIANCE SCHEDULES
TABLE 2 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO INCINERATORS BEFORE [DATE TO BE SPECIFIED IN STATE PLAN]
TABLE 3 TO SUBPART DDDD OF PART 60—MODEL RULE—OPERATING LIMITS FOR WET SCRUBBERS
TABLE 4 TO SUBPART DDDD OF PART 60—MODEL RULE—TOXIC EQUIVALENCY FACTORS
TABLE 5 TO SUBPART DDDD OF PART 60—MODEL RULE—SUMMARY OF REPORTING REQUIREMENTS
TABLE 6 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO INCINERATORS ON AND AFTER [DATE TO BE SPECIFIED IN STATE PLAN]
TABLE 7 TO SUBPART DDDD OF PART 60—EMISSION LIMITATIONS THAT APPLY TO ENERGY RECOVERY UNITS AFTER MAY 20, 2011 [DATE TO BE SPECIFIED IN STATE PLAN]
TABLE 8 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO WASTE-BURNING KILNS AFTER [DATE TO BE SPECIFIED IN STATE PLAN.]
TABLE 9 TO SUBPART DDDD OF PART 60—EMISSION LIMITATIONS THAT APPLY TO SMALL, REMOTE INCINERATORS AFTER MAY 20, 2011

Subpart EEEE—Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006

INTRODUCTION

60.2880 What does this subpart do?
60.2881 When does this subpart become effective?

APPLICABILITY

60.2885 Does this subpart apply to my incineration unit?
60.2886 What is a new incineration unit?
60.2887 What combustion units are excluded from this subpart?
60.2888 Are air curtain incinerators regulated under this subpart?
60.2889 Who implements and enforces this subpart?
60.2890 How are these new source performance standards structured?
60.2891 Do all components of these new source performance standards apply at the same time?

PRECONSTRUCTION SITING ANALYSIS

60.2894 Who must prepare a siting analysis?
60.2895 What is a siting analysis?

WASTE MANAGEMENT PLAN

60.2899 What is a waste management plan?
60.2900 When must I submit my waste management plan?
60.2901 What should I include in my waste management plan?

OPERATOR TRAINING AND QUALIFICATION

60.2905 What are the operator training and qualification requirements?
60.2906 When must the operator training course be completed?
60.2907 How do I obtain my operator qualification?
60.2908 How do I maintain my operator qualification?
60.2909 How do I renew my lapsed operator qualification?
60.2910 What site-specific documentation is required?
60.2911 What if all the qualified operators are temporarily not accessible?

EMISSION LIMITATIONS AND OPERATING LIMITS

60.2915 What emission limitations must I meet and by when?

60.2916 What operating limits must I meet and by when?
60.2917 What if I do not use a wet scrubber to comply with the emission limitations?
60.2918 What happens during periods of startup, shutdown, and malfunction?

PERFORMANCE TESTING

60.2922 How do I conduct the initial and annual performance test?
60.2923 How are the performance test data used?

INITIAL COMPLIANCE REQUIREMENTS

60.2927 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?
60.2928 By what date must I conduct the initial performance test?

CONTINUOUS COMPLIANCE REQUIREMENTS

60.2932 How do I demonstrate continuous compliance with the emission limitations and the operating limits?
60.2933 By what date must I conduct the annual performance test?
60.2934 May I conduct performance testing less often?
60.2935 May I conduct a repeat performance test to establish new operating limits?

MONITORING

60.2939 What continuous emission monitoring systems must I install?
60.2940 How do I make sure my continuous emission monitoring systems are operating correctly?
60.2941 What is my schedule for evaluating continuous emission monitoring systems?
60.2942 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems, and is the data collection requirement enforceable?
60.2943 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?
60.2944 What operating parameter monitoring equipment must I install, and what operating parameters must I monitor?
60.2945 Is there a minimum amount of operating parameter monitoring data I must obtain?

RECORDKEEPING AND REPORTING

60.2949 What records must I keep?
60.2950 Where and in what format must I keep my records?
60.2951 What reports must I submit?
60.2952 What must I submit prior to commencing construction?
60.2953 What information must I submit prior to initial startup?
60.2954 What information must I submit following my initial performance test?
60.2955 When must I submit my annual report?
60.2956 What information must I include in my annual report?
60.2957 What else must I report if I have a deviation from the operating limits or the emission limitations?
60.2958 What must I include in the deviation report?
60.2959 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?
60.2960 Are there any other notifications or reports that I must submit?
60.2961 In what form can I submit my reports?
60.2962 Can reporting dates be changed?

TITLE V OPERATING PERMITS

60.2966 Am I required to apply for and obtain a title V operating permit for my unit?
60.2967 When must I submit a title V permit application for my new unit?

TEMPORARY-USE INCINERATORS AND AIR CURTAIN INCINERATORS USED IN DISASTER RECOVERY

60.2969 What are the requirements for temporary-use incinerators and air curtain incinerators used in disaster recovery?

AIR CURTAIN INCINERATORS THAT BURN ONLY WOOD WASTE, CLEAN LUMBER, AND YARD WASTE

60.2970 What is an air curtain incinerator?
60.2971 What are the emission limitations for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?
60.2972 How must I monitor opacity for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?
60.2973 What are the recordkeeping and reporting requirements for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?
60.2974 Am I required to apply for and obtain a title V operating permit for my air curtain incinerator that burns only wood waste, clean lumber, and yard waste?

EQUATIONS

60.2975 What equations must I use?

DEFINITIONS

60.2977 What definitions must I know?

Tables to Subpart EEEE of Part 60

TABLE 1 TO SUBPART EEEE OF PART 60—EMISSION LIMITATIONS

TABLE 2 TO SUBPART EEEE OF PART 60—OPERATING LIMITS FOR INCINERATORS AND WET SCRUBBERS
TABLE 3 TO SUBPART EEEE OF PART 60—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)
TABLE 4 TO SUBPART EEEE OF PART 60—SUMMARY OF REPORTING REQUIREMENTS

Subpart FFFF—Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units That Commenced Construction On or Before December 9, 2004

INTRODUCTION

60.2980 What is the purpose of this subpart?
60.2981 Am I affected by this subpart?
60.2982 Is a State plan required for all States?
60.2983 What must I include in my State plan?
60.2984 Is there an approval process for my State plan?
60.2985 What if my State plan is not approvable?
60.2986 Is there an approval process for a negative declaration letter?
60.2987 What compliance schedule must I include in my State plan?
60.2988 Are there any State plan requirements for this subpart that apply instead of the requirements specified in subpart B of this part?
60.2989 Does this subpart directly affect incineration unit owners and operators in my State?
60.2990 What Authorities are withheld by EPA?

APPLICABILITY OF STATE PLANS

60.2991 What incineration units must I address in my State plan?
60.2992 What is an existing incineration unit?
60.2993 Are any combustion units excluded from my State plan?
60.2994 Are air curtain incinerators regulated under this subpart?

MODEL RULE—USE OF MODEL RULE

60.2996 What is the purpose of the ''model rule'' in this subpart?
60.2997 How does the model rule relate to the required elements of my State plan?
60.2998 What are the principal components of the model rule?

MODEL RULE—COMPLIANCE SCHEDULE

60.3000 When must I comply?
60.3001 What must I do if I close my OSWI unit and then restart it?
60.3002 What must I do if I plan to permanently close my OSWI unit and not restart it?

MODEL RULE—WASTE MANAGEMENT PLAN

60.3010 What is a waste management plan?
60.3011 When must I submit my waste management plan?
60.3012 What should I include in my waste management plan?

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

60.3014 What are the operator training and qualification requirements?
60.3015 When must the operator training course be completed?
60.3016 How do I obtain my operator qualification?
60.3017 How do I maintain my operator qualification?
60.3018 How do I renew my lapsed operator qualification?
60.3019 What site-specific documentation is required?
60.3020 What if all the qualified operators are temporarily not accessible?

MODEL RULE—EMISSION LIMITATIONS AND OPERATING LIMITS

60.3022 What emission limitations must I meet and by when?
60.3023 What operating limits must I meet and by when?
60.3024 What if I do not use a wet scrubber to comply with the emission limitations?
60.3025 What happens during periods of startup, shutdown, and malfunction?

MODEL RULE—PERFORMANCE TESTING

60.3027 How do I conduct the initial and annual performance test?
60.3028 How are the performance test data used?

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

60.3030 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?
60.3031 By what date must I conduct the initial performance test?

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

60.3033 How do I demonstrate continuous compliance with the emission limitations and the operating limits?
60.3034 By what date must I conduct the annual performance test?
60.3035 May I conduct performance testing less often?
60.3036 May I conduct a repeat performance test to establish new operating limits?

MODEL RULE—MONITORING

60.3038 What continuous emission monitoring systems must I install?

60.3039 How do I make sure my continuous emission monitoring systems are operating correctly?
60.3040 What is my schedule for evaluating continuous emission monitoring systems?
60.3041 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems, and is the data collection requirement enforceable?
60.3042 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?
60.3043 What operating parameter monitoring equipment must I install, and what operating parameters must I monitor?
60.3044 Is there a minimum amount of operating parameter monitoring data I must obtain?

MODEL RULE—RECORDKEEPING AND REPORTING

60.3046 What records must I keep?
60.3047 Where and in what format must I keep my records?
60.3048 What reports must I submit?
60.3049 What information must I submit following my initial performance test?
60.3050 When must I submit my annual report?
60.3051 What information must I include in my annual report?
60.3052 What else must I report if I have a deviation from the operating limits or the emission limitations?
60.3053 What must I include in the deviation report?
60.3054 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?
60.3055 Are there any other notifications or reports that I must submit?
60.3056 In what form can I submit my reports?
60.3057 Can reporting dates be changed?

MODEL RULE—TITLE V OPERATING PERMITS

60.3059 Am I required to apply for and obtain a title V operating permit for my unit?
60.3060 When must I submit a title V permit application for my existing unit?

MODEL RULE—TEMPORARY-USE INCINERATORS AND AIR CURTAIN INCINERATORS USED IN DISASTER RECOVERY

60.3061 What are the requirements for temporary-use incinerators and air curtain incinerators used in disaster recovery?

MODEL RULE—AIR CURTAIN INCINERATORS THAT BURN ONLY WOOD WASTE, CLEAN LUMBER, AND YARD WASTE

60.3062 What is an air curtain incinerator?
60.3063 When must I comply if my air curtain incinerator burns only wood waste, clean lumber, and yard waste?
60.3064 What must I do if I close my air curtain incinerator that burns only wood waste, clean lumber, and yard waste and then restart it?
60.3065 What must I do if I plan to permanently close my air curtain incinerator that burns only wood waste, clean lumber, and yard waste and not restart it?
60.3066 What are the emission limitations for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?
60.3067 How must I monitor opacity for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?
60.3068 What are the recordkeeping and reporting requirements for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?
60.3069 Am I required to apply for and obtain a title V operating permit for my air curtain incinerator that burns only wood waste, clean lumber, and yard waste?

MODEL RULE—EQUATIONS

60.3076 What equations must I use?

MODEL RULE—DEFINITIONS

60.3078 What definitions must I know?

TABLES TO SUBPART FFFF OF PART 60
TABLE 1 TO SUBPART FFFF OF PART 60—MODEL RULE—COMPLIANCE SCHEDULE
TABLE 2 TO SUBPART FFFF OF PART 60—MODEL RULE—EMISSION LIMITATIONS
TABLE 3 TO SUBPART FFFF OF PART 60—MODEL RULE—OPERATING LIMITS FOR INCINERATORS AND WET SCRUBBERS
TABLE 4 TO SUBPART FFFF OF PART 60—MODEL RULE—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)
TABLE 5 TO SUBPART FFFF OF PART 60—MODEL RULE—SUMMARY OF REPORTING REQUIREMENTS [a]

Subparts GGGG–HHHH [Reserved]

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

WHAT THIS SUBPART COVERS

60.4200 Am I subject to this subpart?

EMISSION STANDARDS FOR MANUFACTURERS

60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?
60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

EMISSION STANDARDS FOR OWNERS AND OPERATORS

60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

FUEL REQUIREMENTS FOR OWNERS AND OPERATORS

60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?
60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

COMPLIANCE REQUIREMENTS

60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?
60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?
60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

SPECIAL REQUIREMENTS

60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?
60.4216 What requirements must I meet for engines used in Alaska?
60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

GENERAL PROVISIONS

60.4218 What parts of the General Provisions apply to me?

DEFINITIONS

60.4219 What definitions apply to this subpart?
TABLE 1 TO SUBPART IIII OF PART 60—EMISSION STANDARDS FOR STATIONARY PRE-2007 MODEL YEAR ENGINES WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER AND 2007–2010 MODEL YEAR ENGINES >2,237 KW (3,000 HP) AND WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER
TABLE 2 TO SUBPART IIII OF PART 60—EMISSION STANDARDS FOR 2008 MODEL YEAR AND LATER EMERGENCY STATIONARY CI ICE <37 KW (50 HP) AND WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER
TABLE 3 TO SUBPART IIII OF PART 60—CERTIFICATION REQUIREMENTS FOR STATIONARY FIRE PUMP ENGINES
TABLE 4 TO SUBPART IIII OF PART 60—EMISSION STANDARDS FOR STATIONARY FIRE PUMP ENGINES
TABLE 5 TO SUBPART IIII OF PART 60—LABELING AND RECORDKEEPING REQUIREMENTS FOR NEW STATIONARY EMERGENCY ENGINES
TABLE 6 TO SUBPART IIII OF PART 60—OPTIONAL 3-MODE TEST CYCLE FOR STATIONARY FIRE PUMP ENGINES
TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥30 LITERS PER CYLINDER
TABLE 8 TO SUBPART IIII OF PART 60—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART IIII

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

WHAT THIS SUBPART COVERS

60.4230 Am I subject to this subpart?

EMISSION STANDARDS FOR MANUFACTURERS

60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?
60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?

EMISSION STANDARDS FOR OWNERS AND OPERATORS

60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?
60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?
60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?
60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

COMPLIANCE REQUIREMENTS FOR MANUFACTURERS

60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?
60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?
60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?
60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?
60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

COMPLIANCE REQUIREMENTS FOR OWNERS AND OPERATORS

60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

GENERAL PROVISIONS

60.4246 What parts of the General Provisions apply to me?

MOBILE SOURCE PROVISIONS

60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

DEFINITIONS

60.4248 What definitions apply to this subpart?

TABLES TO SUBPART JJJJ OF PART 60

TABLE 1 TO SUBPART JJJJ OF PART 60—NO_X, CO, AND VOC EMISSION STANDARDS FOR STATIONARY NON-EMERGENCY SI ENGINES ≥100 HP (EXCEPT GASOLINE AND RICH BURN LPG), STATIONARY SI LANDFILL/DIGESTER GAS ENGINES, AND STATIONARY EMERGENCY ENGINES >25 HP
TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS
TABLE 3 TO SUBPART JJJJ OF PART 60—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART JJJJ
TABLE 4 TO SUBPART JJJJ OF PART 60—APPLICABILITY OF MOBILE SOURCE PROVISIONS FOR MANUFACTURERS PARTICIPATING IN THE VOLUNTARY CERTIFICATION PROGRAM AND CERTIFYING STATIONARY SI ICE TO EMISSION STANDARDS IN TABLE 1 OF SUBPART JJJJ

Subpart KKKK—Standards of Performance for Stationary Combustion Turbines

INTRODUCTION

60.4300 What is the purpose of this subpart?

APPLICABILITY

60.4305 Does this subpart apply to my stationary combustion turbine?
60.4310 What types of operations are exempt from these standards of performance?

EMISSION LIMITS

60.4315 What pollutants are regulated by this subpart?
60.4320 What emission limits must I meet for nitrogen oxides (NO_X)?
60.4325 What emission limits must I meet for NO_X if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?
60.4330 What emission limits must I meet for sulfur dioxide (SO_2)?

GENERAL COMPLIANCE REQUIREMENTS

60.4333 What are my general requirements for complying with this subpart?

MONITORING

60.4335 How do I demonstrate compliance for NO_X if I use water or steam injection?
60.4340 How do I demonstrate continuous compliance for NO_X if I do not use water or steam injection?
60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?
60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?
60.4355 How do I establish and document a proper parameter monitoring plan?
60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?
60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?
60.4370 How often must I determine the sulfur content of the fuel?

REPORTING

60.4375 What reports must I submit?
60.4380 How are excess emissions and monitor downtime defined for NO_X?
60.4385 How are excess emissions and monitoring downtime defined for SO_2?
60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?
60.4395 When must I submit my reports?

PERFORMANCE TESTS

60.4400 How do I conduct the initial and subsequent performance tests, regarding NO_X?
60.4405 How do I perform the initial performance test if I have chosen to install a NO_X-diluent CEMS?
60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?
60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

DEFINITIONS

60.4420 What definitions apply to this subpart?

TABLE 1 TO SUBPART KKKK OF PART 60—NITROGEN OXIDE EMISSION LIMITS FOR NEW STATIONARY COMBUSTION TURBINES

Subpart LLLL—Standards of Performance for New Sewage Sludge Incineration Units

INTRODUCTION

60.4760 What does this subpart do?
60.4765 When does this subpart become effective?

APPLICABILITY AND DELEGATION OF AUTHORITY

60.4770 Does this subpart apply to my sewage sludge incineration unit?
60.4775 What is a new sewage sludge incineration unit?
60.4780 What sewage sludge incineration units are exempt from this subpart?
60.4785 Who implements and enforces this subpart?
60.4790 How are these new source performance standards structured?
60.4795 Do all nine components of these new source performance standards apply at the same time?

PRECONSTRUCTION SITING ANALYSIS

60.4800 Who must prepare a siting analysis?
60.4805 What is a siting analysis?

OPERATOR TRAINING AND QUALIFICATION

60.4810 What are the operator training and qualification requirements?
60.4815 When must the operator training course be completed?
60.4820 How do I obtain my operator qualification?
60.4825 How do I maintain my operator qualification?
60.4830 How do I renew my lapsed operator qualification?
60.4835 What if all the qualified operators are temporarily not accessible?
60.4840 What site-specific documentation is required and how often must it be reviewed by qualified operators and plant personnel?

EMISSION LIMITS, EMISSION STANDARDS, AND OPERATING LIMITS AND REQUIREMENTS

60.4845 What emission limits and standards must I meet and by when?
60.4850 What operating limits and requirements must I meet and by when?
60.4855 How do I establish operating limits if I do not use a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection, or if I limit emissions in some other manner, to comply with the emission limits?
60.4860 Do the emission limits, emission standards, and operating limits apply during periods of startup, shutdown, and malfunction?
60.4861 How do I establish affirmative defense for exceedance of an emission limit or standard during malfunction?

INITIAL COMPLIANCE REQUIREMENTS

60.4865 How and when do I demonstrate initial compliance with the emission limits and standards?
60.4870 How do I establish my operating limits?
60.4875 By what date must I conduct the initial air pollution control device inspection and make any necessary repairs?
60.4880 How do I develop a site-specific monitoring plan for my continuous monitoring, bag leak detection, and ash handling systems, and by what date must I conduct an initial performance evaluation?

CONTINUOUS COMPLIANCE REQUIREMENTS

60.4885 How and when do I demonstrate continuous compliance with the emission limits and standards?
60.4890 How do I demonstrate continuous compliance with my operating limits?
60.4895 By what date must I conduct annual air pollution control device inspections and make any necessary repairs?

PERFORMANCE TESTING, MONITORING, AND CALIBRATION REQUIREMENTS

60.4900 What are the performance testing, monitoring, and calibration requirements for compliance with the emission limits and standards?
60.4905 What are the monitoring and calibration requirements for compliance with my operating limits?

RECORDKEEPING AND REPORTING

60.4910 What records must I keep?
60.4915 What reports must I submit?

TITLE V OPERATING PERMITS

60.4920 Am I required to apply for and obtain a Title V operating permit for my unit?
60.4925 When must I submit a title V permit application for my new SSI unit?

DEFINITIONS

60.4930 What definitions must I know?

TABLES

TABLE 1 TO SUBPART LLLL OF PART 60—EMISSION LIMITS AND STANDARDS FOR FLUIDIZED BED NEW SEWAGE SLUDGE INCINERATION UNITS
TABLE 2 TO SUBPART LLLL OF PART 60—EMISSION LIMITS AND STANDARDS FOR NEW MULTIPLE HEARTH SEWAGE SLUDGE INCINERATION UNITS
TABLE 3 TO SUBPART LLLL OF PART 60—OPERATING PARAMETERS FOR NEW SEWAGE SLUDGE INCINERATION UNITS
TABLE 4 TO SUBPART LLLL OF PART 60—TOXIC EQUIVALENCY FACTORS
TABLE 5 TO SUBPART LLLL OF PART 60—SUMMARY OF REPORTING REQUIREMENTS FOR NEW SEWAGE SLUDGE INCINERATION UNITS

Subpart MMMM—Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units

INTRODUCTION

60.5000 What is the purpose of this subpart?
60.5005 Am I affected by this subpart?
60.5010 Is a state plan required for all states?
60.5015 What must I include in my state plan?
60.5020 Is there an approval process for my state plan?
60.5025 What if my state plan is not approvable?
60.5030 Is there an approval process for a negative declaration letter?
60.5035 What compliance schedule must I include in my state plan?
60.5040 Are there any state plan requirements for this subpart that apply instead of the requirements specified in subpart B?
60.5045 In lieu of a state plan submittal, are there other acceptable option(s) for a state to meet its section 111(d)/129 (b)(2) obligations?
60.5050 What authorities will not be delegated to state, local, or tribal agencies?
60.5055 Does this subpart directly affect SSI unit owners and operators in my state?

APPLICABILITY OF STATE PLANS

60.5060 What SSI units must I address in my state plan?
60.5065 What SSI units are exempt from my state plan?

USE OF MODEL RULE

60.5070 What is the ''model rule'' in this subpart?

60.5075 How does the model rule relate to the required elements of my state plan?
60.5080 What are the principal components of the model rule?

MODEL RULE—INCREMENTS OF PROGRESS

60.5085 What are my requirements for meeting increments of progress and achieving final compliance?
60.5090 When must I complete each increment of progress?
60.5095 What must I include in the notifications of achievement of increments of progress?
60.5100 When must I submit the notifications of achievement of increments of progress?
60.5105 What if I do not meet an increment of progress?
60.5110 How do I comply with the increment of progress for submittal of a control plan?
60.5115 How do I comply with the increment of progress for achieving final compliance?
60.5120 What must I do if I close my SSI unit and then restart it?
60.5125 What must I do if I plan to permanently close my SSI unit and not restart it?

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

60.5130 What are the operator training and qualification requirements?
60.5135 When must the operator training course be completed?
60.5140 How do I obtain my operator qualification?
60.5145 How do I maintain my operator qualification?
60.5150 How do I renew my lapsed operator qualification?
60.5155 What if all the qualified operators are temporarily not accessible?
60.5160 What site-specific documentation is required and how often must it be reviewed by qualified operators and plant personnel?

MODEL RULE—EMISSION LIMITS, EMISSION STANDARDS, AND OPERATING LIMITS AND REQUIREMENTS

60.5165 What emission limits and standards must I meet and by when?
60.5170 What operating limits and requirements must I meet and by when?
60.5175 How do I establish operating limits if I do not use a wet scrubber, fabric filter, electrostatic precipitator, activated carbon injection, or afterburner, or if I limit emissions in some other manner, to comply with the emission limits?
60.5180 Do the emission limits, emission standards, and operating limits apply during periods of startup, shutdown, and malfunction?
60.5181 How do I establish affirmative defense for exceedance of an emission limit or standard during malfunction?

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

60.5185 How and when do I demonstrate initial compliance with the emission limits and standards?
60.5190 How do I establish my operating limits?
60.5195 By what date must I conduct the initial air pollution control device inspection and make any necessary repairs?
60.5200 How do I develop a site-specific monitoring plan for my continuous monitoring, bag leak detection, and ash handling systems, and by what date must I conduct an initial performance evaluation?

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

60.5205 How and when do I demonstrate continuous compliance with the emission limits and standards?
60.5210 How do I demonstrate continuous compliance with my operating limits?
60.5215 By what date must I conduct annual air pollution control device inspections and make any necessary repairs?

MODEL RULE—PERFORMANCE TESTING, MONITORING, AND CALIBRATION REQUIREMENTS

60.5220 What are the performance testing, monitoring, and calibration requirements for compliance with the emission limits and standards?
60.5225 What are the monitoring and calibration requirements for compliance with my operating limits?

MODEL RULE—RECORDKEEPING AND REPORTING

60.5230 What records must I keep?
60.5235 What reports must I submit?

MODEL RULE—TITLE V OPERATING PERMITS

60.5240 Am I required to apply for and obtain a title V operating permit for my existing SSI unit?
60.5245 When must I submit a title V permit application for my existing SSI unit?

MODEL RULE—DEFINITIONS

60.5250 What definitions must I know?

TABLES

TABLE 1 TO SUBPART MMMM OF PART 60—MODEL RULE—INCREMENTS OF PROGRESS AND COMPLIANCE SCHEDULES FOR EXISTING SEWAGE SLUDGE INCINERATION UNITS

TABLE 2 TO SUBPART MMMM OF PART 60—MODEL RULE—EMISSION LIMITS AND STANDARDS FOR EXISTING FLUIDIZED BED SEWAGE SLUDGE INCINERATION UNITS
TABLE 3 TO SUBPART MMMM OF PART 60—MODEL RULE—EMISSION LIMITS AND STANDARDS FOR EXISTING MULTIPLE HEARTH SEWAGE SLUDGE INCINERATION UNITS
TABLE 4 TO SUBPART MMMM OF PART 60—MODEL RULE—OPERATING PARAMETERS FOR EXISTING SEWAGE SLUDGE INCINERATION UNITS
TABLE 5 TO SUBPART MMMM OF PART 60—MODEL RULE—TOXIC EQUIVALENCY FACTORS
TABLE 6 TO SUBPART MMMM OF PART 60—MODEL RULE—SUMMARY OF REPORTING REQUIREMENTS FOR EXISTING SEWAGE SLUDGE INCINERATION UNITS

Subpart OOOO—Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

60.5360 What is the purpose of this subpart?
60.5365 Am I subject to this subpart?
60.5370 When must I comply with this subpart?
60.5375 What standards apply to gas well affected facilities?
60.5380 What standards apply to centrifugal compressor affected facilities?
60.5385 What standards apply to reciprocating compressor affected facilities?
60.5390 What standards apply to pneumatic controller affected facilities?
60.5395 What standards apply to storage vessel affected facilities?
60.5400 What equipment leak standards apply to affected facilities at an onshore natural gas processing plant?
60.5401 What are the exceptions to the equipment leak standards for affected facilities at onshore natural gas processing plants?
60.5402 What are the alternative emission limitations for equipment leaks from onshore natural gas processing plants?
60.5405 What standards apply to sweetening units at onshore natural gas processing plants?
60.5406 What test methods and procedures must I use for my sweetening units affected facilities at onshore natural gas processing plants?
60.5407 What are the requirements for monitoring of emissions and operations from my sweetening unit affected facilities at onshore natural gas processing plants?
60.5408 What is an optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure?
60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?
60.5411 What additional requirements must I meet to determine initial compliance for my closed vent systems routing emissions from storage vessels or centrifugal compressor wet seal fluid degassing systems?
60.5412 What additional requirements must I meet for determining initial compliance with control devices used to comply with the emission standards for my storage vessel or centrifugal compressor affected facility?
60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?
60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?
60.5416 What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my storage vessel or centrifugal compressor affected facility?
60.5417 What are the continuous control device monitoring requirements for my storage vessel or centrifugal compressor affected facility?
60.5420 What are my notification, reporting, and recordkeeping requirements?
60.5421 What are my additional recordkeeping requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants?
60.5422 What are my additional reporting requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants?
60.5423 What additional recordkeeping and reporting requirements apply to my sweetening unit affected facilities at onshore natural gas processing plants?
60.5425 What parts of the General Provisions apply to me?
60.5430 What definitions apply to this subpart?
TABLE 1 TO SUBPART OOOO OF PART 60—REQUIRED MINIMUM INITIAL SO_2 EMISSION REDUCTION EFFICIENCY (Z_i)
TABLE 2 TO SUBPART OOOO OF PART 60—REQUIRED MINIMUM SO_2 EMISSION REDUCTION EFFICIENCY (Z_c)

TABLE 3 TO SUBPART OOOO OF PART 60—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART OOOO

AUTHORITY: 42 U.S.C. 7401 *et seq.*

SOURCE: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart A—General Provisions

§ 60.1 Applicability.

(a) Except as provided in subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(b) Any new or revised standard of performance promulgated pursuant to section 111(b) of the Act shall apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(c) In addition to complying with the provisions of this part, the owner or operator of an affected facility 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, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter.

(d) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* (1) This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia (''site'').

(2) Except for compliance with 40 CFR 60.49b(u), the site shall have the option of either complying directly with the requirements of this part, or reducing the site-wide emissions caps in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the site-wide emissions caps in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this part.

(3) Notwithstanding the provisions of paragraph (d)(2) of this section, for any provisions of this part except for Subpart Kb, the owner/operator of the site shall comply with the applicable provisions of this part if the Administrator determines that compliance with the provisions of this part is necessary for achieving the objectives of the regulation and the Administrator notifies the site in accordance with the provisions of the permit issued pursuant to 40 CFR 52.2454.

[40 FR 53346, Nov. 17, 1975, as amended at 55 FR 51382, Dec. 13, 1990; 59 FR 12427, Mar. 16, 1994; 62 FR 52641, Oct. 8, 1997]

§ 60.2 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.*)

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

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his 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 an existing facility 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 existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any ''excluded additions'' as defined in IRS Publication 534, as would be done for tax purposes.

Clean coal technology demonstration project means a project using funds appropriated under the heading 'Department of Energy-Clean Coal Technology', up to a total amount of $2,500,000,000 for commercial demonstrations of clean coal technology, or similar projects funded through appropriations for the Environmental Protection Agency.

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 modification 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.

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

Continuous monitoring system means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Electric utility steam generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

Equivalent method means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

Excess Emissions and Monitoring Systems Performance Report is a report that must be submitted periodically by a source in order to provide data on its compliance with stated emission limits and operating parameters, and on the performance of its monitoring systems.

Existing facility means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type.

Force majeure means, for purposes of § 60.8, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

Isokinetic sampling means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

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.

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.

Modification means any physical change in, or change in the method of

operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

Monitoring device means the total equipment, required under the monitoring of operations sections in applicable subparts, used to measure and record (if applicable) process parameters.

Nitrogen oxides means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this part.

One-hour period 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.

Owner or operator means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

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

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

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).

Proportional sampling means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

Reactivation of a very clean coal-fired electric utility steam generating unit means any physical change or change in the method of operation associated with the commencement of commercial operations by a coal-fired utility unit after a period of discontinued operation where the unit:

(1) Has not been in operation for the two-year period prior to the enactment of the Clean Air Act Amendments of 1990, and the emissions from such unit continue to be carried in the permitting authority's emissions inventory at the time of enactment;

(2) Was equipped prior to shut-down with a continuous system of emissions control that achieves a removal efficiency for sulfur dioxide of no less than 85 percent and a removal efficiency for particulates of no less than 98 percent;

(3) Is equipped with low-NO_X burners prior to the time of commencement of operations following reactivation; and

(4) Is otherwise in compliance with the requirements of the Clean Air Act.

Reference method means any method of sampling and analyzing for an air pollutant as specified in the applicable subpart.

Repowering means replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the Administrator, in consultation with the Secretary of Energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990. Repowering shall also include any oil and/or gas-fired unit which has been awarded clean coal technology demonstration funding as of January 1, 1991, by the Department of Energy.

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.

Shutdown means the cessation of operation of an affected facility for any purpose.

Six-minute period means any one of the 10 equal parts of a one-hour period.

Standard means a standard of performance proposed or promulgated under this part.

Standard conditions means a temperature of 293 K (68F) and a pressure of 101.3 kilopascals (29.92 in Hg).

Startup means the setting in operation of an affected facility 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.

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.

Volatile Organic Compound means any organic compound which participates in atmospheric photochemical reactions; or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under any subpart.

[44 FR 55173, Sept. 25, 1979, as amended at 45 FR 5617, Jan. 23, 1980; 45 FR 85415, Dec. 24, 1980; 54 FR 6662, Feb. 14, 1989; 55 FR 51382, Dec. 13, 1990; 57 FR 32338, July 21, 1992; 59 FR 12427, Mar. 16, 1994; 72 FR 27442, May 16, 2007]

§ 60.3 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
m—meter
m^3—cubic meter
mg—milligram—10^{-3} gram
mm—millimeter—10^{-3} meter
Mg—megagram—10^6 gram
mol—mole
N—newton
ng—nanogram—10^{-9} gram
nm—nanometer—10^{-9} meter
Pa—pascal
s—second
V—volt
W—watt
Ω—ohm
μg—microgram—10^{-6} gram

(b) Other units of measure:

Btu—British thermal unit
°C—degree Celsius (centigrade)
cal—calorie
cfm—cubic feet per minute
cu ft—cubic feet
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
gal—gallon
gr—grain
g-eq—gram equivalent
hr—hour
in—inch
k—1,000
l—liter
lpm—liter per minute
lb—pound
meq—milliequivalent
min—minute
ml—milliliter
mol. wt.—molecular weight
ppb—parts per billion
ppm—parts per million
psia—pounds per square inch absolute
psig—pounds per square inch gage
°R—degree Rankine
scf—cubic feet at standard conditions
scfh—cubic feet per hour at standard conditions
scm—cubic meter at standard conditions
sec—second
sq ft—square feet
std—at standard conditions

(c) Chemical nomenclature:

CdS—cadmium sulfide

CO—carbon monoxide
CO_2—carbon dioxide
HCl—hydrochloric acid
Hg—mercury
H_2O—water
H_2S—hydrogen sulfide
H_2SO_4—sulfuric acid
N_2—nitrogen
NO—nitric oxide
NO_2—nitrogen dioxide
NO_X—nitrogen oxides
O_2—oxygen
SO_2—sulfur dioxide
SO_3—sulfur trioxide
SO_X—sulfur oxides

(d) Miscellaneous:

A.S.T.M.—American Society for Testing and Materials

[42 FR 37000, July 19, 1977; 42 FR 38178, July 27, 1977]

§ 60.4 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, Office of Ecosystem Protection, U.S. Environmental Protection Agency, 5 Post Office Square—Suite 100, Boston, MA 02109–3912.

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 Protection Division, Mail Code 3AP00, 1650 Arch Street, Philadelphia, PA 19103–2029.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, 61 Forsyth St. SW., Suite 9T43, Atlanta, Georgia 30303–8960.

Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, IL 60604–3590.

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 Waste Management Division, 11201 Renner Boulevard, Lenexa, Kansas 66219.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming) Director, Air and Toxics Technical Enforcement Program, Office of Enforcement, Compliance and Environmental Justice, Mail Code 8ENF–AT, 1595 Wynkoop Street, Denver, CO 80202–1129.

Region IX (Arizona, California, Hawaii and Nevada; the territories of American Samoa and Guam; the Commonwealth of the Northern Mariana Islands; the territories of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Atoll, Palmyra Atoll, and Wake Islands; and certain U.S. Government activities in the freely associated states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau), Director, Air Division, U.S. Environmental Protection Agency, 75 Hawthorne 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 111(c) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards of performance for new stationary sources located in such State. All information required to be submitted to EPA under paragraph (a) of this section, must also be submitted to the appropriate State Agency of any State to which this authority has been delegated (provided, that each specific delegation may except sources from a certain Federal or State reporting requirement). The appropriate mailing address for those States whose delegation request has been approved is as follows:

(A) [Reserved]

(B) State of Alabama: Alabama Department of Environmental Management, P.O. Box 301463, Montgomery, Alabama 36130–1463.

(C) State of Alaska, Department of Environmental Conservation, Pouch O, Juneau, AK 99811.

(D) Arizona:

Arizona Department of Environmental Quality, 1110 West Washington Street, Phoenix, AZ 85007.

Maricopa County Air Quality Department, 1001 North Central Avenue, Suite 900, Phoenix, AZ 85004.

Pima County Department of Environmental Quality, 33 North Stone Avenue, Suite 700, Tucson, AZ 85701.

Pinal County Air Quality Control District, 31 North Pinal Street, Building F, Florence, AZ 85132.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(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:

Amador County Air Pollution Control District, 12200–B Airport Road, Jackson, CA 95642.

Antelope Valley Air Quality Management District, 43301 Division Street, Suite 206, Lancaster, CA 93535.

Bay Area Air Quality Management District, 939 Ellis Street, San Francisco, CA 94109.

Butte County Air Quality Management District, 2525 Dominic Drive, Suite J, Chico, CA 95928.

Calaveras County Air Pollution Control District, 891 Mountain Ranch Road, San Andreas, CA 95249.

Colusa County Air Pollution Control District, 100 Sunrise Blvd., Suite A–3, Colusa, CA 95932–3246.

El Dorado County Air Quality Management District, 2850 Fairlane Court, Bldg. C, Placerville, CA 95667–4100.

Eastern Kern Air Pollution Control District, 2700 ''M'' Street, Suite 302, Bakersfield, CA 93301–2370.

Feather River Air Quality Management District, 1007 Live Oak Blvd., Suite B–3, Yuba City, CA 95991.

Glenn County Air Pollution Control District, 720 N. Colusa Street, P.O. Box 351, Willows, CA 95988–0351.

Great Basin Unified Air Pollution Control District, 157 Short Street, Suite 6, Bishop, CA 93514–3537.

Imperial County Air Pollution Control District, 150 South Ninth Street, El Centro, CA 92243–2801.

Lake County Air Quality Management District, 885 Lakeport Blvd., Lakeport, CA 95453–5405.

Lassen County Air Pollution Control District, 707 Nevada Street, Suite 1, Susanville, CA 96130.

Mariposa County Air Pollution Control District, P.O. Box 5, Mariposa, CA 95338.

Mendocino County Air Quality Management District, 306 E. Gobbi Street, Ukiah, CA 95482–5511.

Modoc County Air Pollution Control District, 619 North Main Street, Alturas, CA 96101.

Mojave Desert Air Quality Management District, 14306 Park Avenue, Victorville, CA 92392–2310.

Monterey Bay Unified Air Pollution Control District, 24580 Silver Cloud Court, Monterey, CA 93940.

North Coast Unified Air Quality Management District, 2300 Myrtle Avenue, Eureka, CA 95501–3327.

Northern Sierra Air Quality Management District, 200 Litton Drive, Suite 320, P.O. Box 2509, Grass Valley, CA 95945–2509.

Northern Sonoma County Air Pollution Control District, 150 Matheson Street, Healdsburg, CA 95448–4908.

Placer County Air Pollution Control District, 3091 County Center Drive, Suite 240, Auburn, CA 95603.

Sacramento Metropolitan Air Quality Management District, 777 12th Street, Third Floor, Sacramento, CA 95814–1908.

San Diego County Air Pollution Control District, 10124 Old Grove Road, San Diego, CA 92131–1649.

San Joaquin Valley Air Pollution Control District, 1990 E. Gettysburg, Fresno, CA 93726.

San Luis Obispo County Air Pollution Control District, 3433 Roberto Court, San Luis Obispo, CA 93401–7126.

Santa Barbara County Air Pollution Control District, 260 North San Antonio Road, Suite A, Santa Barbara, CA 93110–1315.

Shasta County Air Quality Management District, 1855 Placer Street, Suite 101, Redding, CA 96001–1759.

Siskiyou County Air Pollution Control District, 525 So. Foothill Drive, Yreka, CA 96097–3036.

South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, CA 91765–4182.

Tehama County Air Pollution Control District, P.O. Box 8069 (1750 Walnut Street), Red Bluff, CA 96080–0038.

Tuolumne County Air Pollution Control District, 22365 Airport, Columbia, CA 95310.

Ventura County Air Pollution Control District, 669 County Square Drive, 2nd Floor, Ventura, CA 93003–5417.

Yolo-Solano Air Quality Management District, 1947 Galileo Court, Suite 103, Davis, CA 95616–4882.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(G) State of Colorado, Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, CO 80222–1530.

NOTE: For a table listing Region VIII's NSPS 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, Department of Natural Resources & Environmental Control, 89 Kings Highway, P.O. Box 1401, Dover, Delaware 19903.

(J) District of Columbia, Department of Public Health, Air Quality Division, 51 N Street, NE., Washington, DC 20002.

(K) State of Florida: Florida Department of Environmental Protection, Division of Air Resources Management, 2600 Blair Stone Road, MS 5500, Tallahassee, Florida 32399–2400.

(L) State of Georgia: Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, 4244 International Parkway, Suite 120, Atlanta, Georgia 30354.

(M) Hawaii:

Clean Air Branch, Hawaii Department of Health, 919 Ala Moana Blvd., Suite 203, Honolulu, HI 96814.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(N) State of Idaho, Department of Health and Welfare, Statehouse, Boise, ID 83701.

(O) State of Illinois: Illinois Environmental Protection Agency, 1021 North Grand Avenue East, Springfield, Illinois 62794.

(P) State of Indiana: Indiana Department of Environmental Management, Office of Air Quality, 100 North Senate Avenue, Indianapolis, Indiana 46204.

(Q) State of Iowa: Iowa Department of Natural Resources, Environmental Protection Division, Air Quality Bureau, 7900 Hickman Road, Suite 1, Urbandale, IA 50322.

(R) State of Kansas: Kansas Department of Health and Environment, Bureau of Air and Radiation, 1000 S.W. Jackson, Suite 310, Topeka, KS 66612–1366.

(S) Commonwealth of Kentucky: Commonwealth of Kentucky, Energy and Environment Cabinet, Department of Environmental Protection, Division for Air Quality, 200 Fair Oaks Lane, 1st Floor, Frankfort, Kentucky 40610–1403.

Louisville Metro Air Pollution Control District, 850 Barret Avenue, Louisville, Kentucky 40204.

(T) State Louisiana: Louisiana Department of Environmental Quality, P.O. Box 4301, Baton Rouge, Louisiana 70821–4301. For a list of delegated standards for Louisiana (excluding Indian country), see paragraph (e)(2) of this section.

(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, Department of the Environment, 1800 Washington Boulevard, Suite 705, Baltimore, Maryland 21230.

(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: Michigan Department of Natural Resources and Environment, Air Quality Division, P.O. Box 30028, Lansing, Michigan 48909.

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

(Z) State of Mississippi: Hand Deliver or Courier: Mississippi Department of Environmental Quality, Office of Pollution Control, Air Division, 515 East Amite Street, Jackson, Mississippi 39201, Mailing Address: Mississippi Department of Environmental Quality, Office of Pollution Control, Air Division, P.O. Box 2261, Jackson, Mississippi 39225.

(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 Environmental Quality, 1520 E. 6th Ave., PO Box 200901, Helena, MT 59620–0901.

NOTE: For a table listing Region VIII's NSPS 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:

Nevada Division of Environmental Protection, 901 South Stewart Street, Suite 4001, Carson City, NV 89701–5249.

Clark County Department of Air Quality and Environmental Management, 500 S. Grand Central Parkway, 1st Floor, P.O. Box 555210, Las Vegas, NV 89155–5210.

Washoe County Health District, Air Quality Management Division, 1001 E. 9th Street, Building A, Suite 115A, Reno, NV 89520.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(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, Division of Environmental Quality, Enforcement Element, John Fitch Plaza, CN–027, Trenton, NJ 08625.

(1) The following table lists the specific source and pollutant categories that have been delegated to the states in Region II. The (X) symbol is used to indicate each category that has been delegated.

	Subpart	State			
		New Jersey	New York	Puerto Rico	Virgin Islands
D	Fossil-Fuel Fired Steam Generators for Which Construction Commenced After August 17, 1971 (Steam Generators and Lignite Fired Steam Generators).	X	X	X	X
Da	Electric Utility Steam Generating Units for Which Construction Commenced After September 18, 1978.	X		X.	
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
H	Sulfuric Acid Plants	X	X	X	X
I	Asphalt Concrete Plants	X	X	X	X
J	Petroleum Refineries—(All Categories)	X	X	X	X
K	Storage Vessels for Petroleum Liquids Constructed After June 11, 1973, and prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids Constructed After May 18, 1978.	X	X	X.	
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Ingot Production Plants	X	X	X	X
N	Iron and Steel Plants	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate	X	X	X	X
Y	Coal Preparation Plants	X	X	X	X
Z	Ferroally Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces	X	X	X	X
AAa	Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Plants.	X	X	X.	
BB	Kraft Pulp Mills	X	X	X.	
CC	Glass Manufacturing Plants	X	X	X.	
DD	Grain Elevators	X	X	X.	
EE	Surface Coating of Metal Furniture	X	X	X.	
GG	Stationary Gas Turbines	X	X	X.	
HH	Lime Plants	X	X	X.	
KK	Lead Acid Battery Manufacturing Plants	X	X.		
LL	Metallic Mineral Processing Plants	X	X	X.	
MM	Automobile and Light-Duty Truck Surface Coating Operations	X	X.		
NN	Phosphate Rock Plants	X	X.		
PP	Ammonium Sulfate Manufacturing Plants	X	X.		
QQ	Graphic Art Industry Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations.	X	X	X.	
SS	Industrial Surface Coating: Large Appliances	X	X	X.	
TT	Metal Coil Surface Coating	X	X	X.	
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X.	
VV	Equipment Leaks of Volatile Organic Compounds in Synthetic Organic Chemical Manufacturing Industry.	X		X.	
WW	Beverage Can Surface Coating Industry	X	X	X.	
XX	Bulk Gasoline Terminals	X	X	X.	
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X.	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		X.	
HHH	Synthetic Fiber Production Facilities	X		X.	
JJJ	Petroleum Dry Clearners	X	X	X.	
KKK	Equipment Leaks of VOC from Onshore Natural Gas Processing Plants.				
LLL	Onshore Natural Gas Processing Plants; SO_2 Emissions		X.		
OOO	Nonmetallic Mineral Processing Plants		X	X.	
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	X.	

(GG) State of New Mexico: New Mexico Environment Department, 1190 St. Francis Drive, P.O. Box 26110, Santa Fe, New Mexico 87502. Note: For a list of delegated standards for New Mexico (excluding Bernalillo County and Indian country), see paragraph (e)(1) of this section.

(i) Albuquerque-Bernalillo County Air Quality Control Board, c/o Environmental Health Department, P.O. Box 1293, Albuquerque, New Mexico 87103.

(ii) [Reserved]

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

(II) State of North Carolina: North Carolina Department of Environment and Natural Resources, Division of Air Quality, 1641 Mail Service Center, Raleigh, North Carolina 27699–1641 or local agencies, Forsyth County Environmental Affairs, 201 North Chestnut Street, Winston-Salem, North Carolina 27101 or Forsyth County Air Quality Section, 537 North Spruce Street, Winston-Salem, North Carolina 27101; Mecklenburg County Land Use & Environmental Services Agency, Air Quality, 700 N. Tryon St., Suite 205, Charlotte, North Carolina 28202–2236; Western North Carolina Regional Air Quality Agency, 49 Mount Carmel Road, Asheville, North Carolina 28806.

(JJ) State of North Dakota, Division of Air Quality, North Dakota Department of Health, P.O. Box 5520, Bismarck, ND 58506–5520.

NOTE: For a table listing Region VIII's NSPS 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, 146 South High Street, Room 904, Akron, OH 44308.

(ii) Stark County; Director, Canton City Health Department, Air Pollution Control Division, 420 Market Avenue North, Canton, Ohio 44702–1544.

(iii) Butler, Clermont, Hamilton, and Warren Counties; Director, Hamilton County Department of Environmental Services, 250 William Howard Taft Road, Cincinnati, Ohio 45219–2660.

(iv) Cuyahoga County; Commissioner, Cleveland Department of Public Health, Division of Air Quality, 75 Erieview Plaza 2nd Floor, Cleveland, Ohio 44114.

(v) Clark, Darke, Greene, Miami, Montgomery, and Preble Counties; Director, Regional Air Pollution Control Agency, 117 South Main Street, Dayton, Ohio 45422–1280.

(vi) Lucas County and the City of Rossford (in Wood County); Director, City of Toledo, Division of Environmental Services, 348 South Erie Street, Toledo, OH 43604.

(vii) Adams, Brown, Lawrence, and Scioto Counties; Portsmouth Local Air Agency, 605 Washington Street, Third Floor, Portsmouth, OH 45662.

(viii) Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Huron, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Van Wert Williams, Wood (Except City of Rossford), and Wyandot Counties; Ohio Environmental Protection Agency, Northwest District Office, Air Pollution Control, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

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

(x) Athens, Belmont, Coshocton, Gallia, Guemsey, Harrison, Hocking, Jackson, Jefferson, Meigs, Monroe, 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.

(xi) Champaign, Clinton, Highland, Logan, and Shelby Counties; Ohio Environmental Protection Agency, Southwest District Office, Air Pollution Unit, 401 East Fifth Street, Dayton, Ohio 45402–2911.

(xii) Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Morrow, Pickaway, and Union Counties; Ohio Environmental Protection Agency, Central District Office, Air Pollution control, 50 West Town Street, Suite 700, Columbus, Ohio 43215.

(xiii) Geauga and Lake Counties; Lake County General Health District, Air Pollution Control, 33 Mill Street, Painesville, OH 44077.

(xiv) Mahoning and Trumbull Counties; Mahoning-Trumbull Air Pollution Control Agency, 345 Oak Hill Avenue, Suite 200, Youngstown, OH 44502.

(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. (i) Oregon Department of Environmental Quality (ODEQ), 811 SW Sixth Avenue, Portland, OR 97204–1390, *http://www.deq.state.or.us*.

(ii) Lane Regional Air Pollution Authority (LRAPA), 1010 Main Street, Springfield, Oregon 97477, *http://www.lrapa.org*.

(NN)(i) City of Philadelphia, Department of Public Health, Air Management Services, 321 University Avenue, Philadelphia, Pennsylvania 19104.

(ii) Commonwealth of Pennsylvania, Department of Environmental Protection, Bureau of Air Quality Control, P.O. Box 8468, 400 Market Street, Harrisburg, Pennsylvania 17105.

(iii) Allegheny County Health Department, Bureau of Environmental Quality, Division of Air Quality, 301 39th Street, Pittsburgh, Pennsylvania 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: South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201.

(QQ) State of South Dakota, Air Quality Program, Department of Environment and Natural Resources, Joe Foss Building, 523 East Capitol, Pierre, SD 57501–3181.

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

(RR) State of Tennessee: Tennessee Department of Environment and Conservation, Division of Air Pollution Control, 401 Church Street, 9th Floor, L&C Annex, Nashville, Tennessee 37243–1531.

Knox County Air Quality Management—Department of Public Health, 140 Dameron Avenue, Knoxville, TN 37917.

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

Chattanooga-Hamilton County Air Pollution Control Bureau, 6125 Preservation Drive, Chattanooga, TN 37416.

Memphis-Shelby County Health Department—Air Pollution Control Program, 814 Jefferson Avenue, Memphis, TN 38105.

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

(TT) State of Utah, Division of Air Quality, Department of Environmental Quality, P.O. Box 144820, Salt Lake City, UT 84114–4820.

NOTE: For a table listing Region VIII's NSPS 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, Department of Environmental Quality, 629 East Main Street, Richmond, Virginia 23219.

(WW) *State of Washington*. (i) Washington State Department of Ecology (Ecology), P.O. Box 47600, Olympia, WA 98504–7600, *http://www.ecy.wa.gov/*

(ii) Benton Clean Air Authority (BCAA), 650 George Washington Way, Richland, WA 99352–4289, *http://www.bcaa.net/*

(iii) Northwest Air Pollution Control Authority (NWAPA), 1600 South Second St., Mount Vernon, WA 98273–5202, *http://www.nwair.org/*

(iv) Olympic Regional Clean Air Agency (ORCAA), 909 Sleater-Kinney Road S.E., Suite 1, Lacey, WA 98503–1128, *http://www.orcaa.org/*

(v) Puget Sound Clean Air Agency (PSCAA), 110 Union Street, Suite 500, Seattle, WA 98101–2038, *http://www.pscleanair.org/*

(vi) Spokane County Air Pollution Control Authority (SCAPCA), West 1101 College, Suite 403, Spokane, WA 99201, *http://www.scapca.org/*

(vii) Southwest Clean Air Agency (SWCAA), 1308 NE. 134th St., Vancouver, WA 98685–2747, *http://www.swcleanair.org/*

(viii) Yakima Regional Clean Air Authority (YRCAA), 6 South 2nd Street, Suite 1016, Yakima, WA 98901, *http://co.yakima.wa.us/cleanair/default.htm*

(ix) The following table lists the delegation status of the New Source Performance Standards for the State of Washington. An ''X'' indicates the subpart has been delegated, subject to all the conditions and limitations set forth in Federal law and the letters granting delegation. Some authorities cannot be delegated and are retained by EPA. Refer to the letters granting delegation for a discussion of these retained authorities. The dates noted at the end of the table indicate the effective dates of Federal rules that have been delegated. Authority for implementing and enforcing any amendments made to these rules after these effective dates are not delegated.

NSPS SUBPARTS DELEGATED TO WASHINGTON AIR AGENCIES

Subpart [1]	Washington							
	Ecology [2]	BCAA [3]	NWAPA [4]	ORCAA [5]	PSCAA [6]	SCAPCA [7]	SWCAA [8]	YRCAA [9]
A General Provisions	X	X	X	X	X	X	X	X
B Adoption and Submittal of State Plans for Designated Facilities.								
C Emission Guidelines and Compliance Times.								
Cb Large Municipal Waste Combustors that are Constructed on or before September 20, 1994 (Emission Guidelines and Compliance Times).								
Cc Municipal Solid Waste Landfills (Emission Guidelines and Compliance Times).								
Cd Sulfuric Acid Production Units (Emission Guidelines and Compliance Times).								
Ce Hospital/Medical/Infectious Waste Incinerators (Emission Guidelines and Compliance Times).								
D Fossil-Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971	X	X	X	X	X	X	X	X
Da Electric Utility Steam Generating Units for which Construction is Commenced after September 18, 1978	X	X	X	X	X	X	X	X
Db Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X	X	X	X	X
Dc Small Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X	X	X	X	X
E Incinerators	X	X	X	X	X	X	X	X
Ea Municipal Waste Combustors for which Construction is Commenced after December 20, 1989 and on or before September 20, 1994	X	X	X	X	X	X	X	X
Eb—Large Municipal Waste Combustors	.....	X	.....	X	X	X		
Ec—Hospital/Medical/Infectious Waste Incinerators	X	X	X	X	X	X		

NSPS SUBPARTS DELEGATED TO WASHINGTON AIR AGENCIES—Continued

Subpart [1]	Washington							
	Ecology [2]	BCAA [3]	NWAPA [4]	ORCAA [5]	PSCAA [6]	SCAPCA [7]	SWCAA [8]	YRCAA [9]
F Portland Cement Plants	X	X	X	X	X	X	X	X
G Nitric Acid Plants	X	X	X	X	X	X	X	X
H Sulfuric Acid Plants	X	X	X	X	X	X	X	X
I Hot Mix Asphalt Facilities	X	X	X	X	X	X	X	X
J Petroleum Refineries	X	X	X	X	X	X	X	X
K Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after June 11, 1973 and prior to May 19, 1978	X	X	X	X	X	X	X	X
Ka Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced after May 18, 1978 and prior to July 23, 1984	X	X	X	X	X	X	X	X
Kb VOC Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984	X	X	X	X	X	X	X	X
L Secondary Lead Smelters	X	X	X	X	X	X	X	X
M Secondary Brass and Bronze Production Plants	X	X	X	X	X	X	X	X
N Primary Emissions from Basic Oxygen Process Furnaces for which Construction is Commenced after June 11, 1973	X	X	X	X	X	X	X	X
Na Secondary Emissions from Basic Oxygen Process Steel-making Facilities for which Construction is Commenced after January 20, 1983	X	X	X	X	X	X	X	X
O Sewage Treatment Plants	X	X	X	X	X	X	X	X
P Primary Copper Smelters	X	X	X	X	X	X	X	X
Q Primary Zinc Smelters	X	X	X	X	X	X	X	X
R Primary Lead Smelters	X	X	X	X	X	X	X	X
S Primary Aluminum Reduction Plants [10]	X							
T Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X	X	X	X	X
U Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X	X	X	X	X
V Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X	X	X	X	X
W Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X	X	X	X	X
X Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	X	X	X	X	X	X	X	X
Y Coal Preparation Plants	X	X	X	X	X	X	X	X
Z Ferroalloy Production Facilities	X	X	X	X	X	X	X	X

NSPS SUBPARTS DELEGATED TO WASHINGTON AIR AGENCIES—Continued

Subpart [1]	Washington							
	Ecology [2]	BCAA [3]	NWAPA [4]	ORCAA [5]	PSCAA [6]	SCAPCA [7]	SWCAA [8]	YRCAA [9]
AA Steel Plants: Electric Arc Furnaces Constructed after October 21, 1974 and on or before August 17, 1983	X	X	X	X	X	X	X	X
AAa Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed after August 7, 1983	X	X	X	X	X	X	X	X
BB Kraft Pulp Mills [11]	X							
CC Glass Manufacturing Plants	X	X	X	X	X	X	X	X
DD Grain Elevators	X	X	X	X	X	X	X	X
EE Surface Coating of Metal Furniture	X	X	X	X	X	X	X	X
GG Stationary Gas Turbines	X	X	X	X	X	X	X	X
HH Lime Manufacturing Plants	X	X	X	X	X	X	X	X
KK Lead-Acid Battery Manufacturing Plants	X	X	X	X	X	X	X	X
LL Metallic Mineral Processing Plants	X	X	X	X	X	X	X	X
MM Automobile and Light Duty Truck Surface Coating Operations	X	X	X	X	X	X	X	X
NN Phosphate Rock Plants	X	X	X	X	X	X	X	X
PP Ammonium Sulfate Manufacture	X	X	X	X	X	X	X	X
QQ Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X	X	X	X	X
RR Pressure Sensitive Tape and Label Surface Coating Standards	X	X	X	X	X	X	X	X
SS Industrial Surface Coating: Large Appliances	X	X	X	X	X	X	X	X
TT Metal Coil Surface Coating	X	X	X	X	X	X	X	X
UU Asphalt Processing and Asphalt Roof Manufacture	X	X	X	X	X	X	X	X
VV Equipment Leaks of VOC in Synthetic Organic Chemical Manufacturing Industry	X	X	X	X	X	X	X	X
WW Beverage Can Surface Coating Industry	X	X	X	X	X	X	X	X
XX Bulk Gasoline Terminals	X	X	X	X	X	X	X	X
AAA New Residential Wood Heaters.								
BBB Rubber Tire Manufacturing Industry	X	X	X	X	X	X	X	X
DDD VOC Emissions from Polymer Manufacturing Industry	X	X	X	X	X	X	X	X
FFF Flexible Vinyl and Urethane Coating and Printing	X	X	X	X	X	X	X	X
GGG Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X	X	X	X	X
HHH Synthetic Fiber Production Facilities	X	X	X	X	X	X	X	X
III VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes	X	X	X	X	X	X	X	X

NSPS SUBPARTS DELEGATED TO WASHINGTON AIR AGENCIES—Continued

Subpart [1]	Washington							
	Ecology [2]	BCAA [3]	NWAPA [4]	ORCAA [5]	PSCAA [6]	SCAPCA [7]	SWCAA [8]	YRCAA [9]
JJJ Petroleum Dry Cleaners	X	X	X	X	X	X	X	X
KKK Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	X	X	X	X	X	X	X	X
LLL Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	X	X	X	X	X
NNN VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations	X	X	X	X	X	X	X	X
OOO Nonmetallic Mineral Processing Plants	.....	.....	X	.....	X	.....	X	
PPP Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X	X	X	X	X
QQQ VOC Emissions from Petroleum Refinery Wastewater Systems	X	X	X	X	X	X	X	X
RRR VOCs from Synthetic Organic Chemical Manufacturing Industry Reactor Processes	X	X	X	X	X	X	X	X
SSS Magnetic Tape Coating Facilities	X	X	X	X	X	X	X	X
TTT Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	X	X	X	X	X	X	X	X
UUU Calciners and Dryers in Mineral Industries	X	X	X	X	X	X	X	X
VVV Polymeric Coating of Supporting Substrates Facilities	X	X	X	X	X	X	X	X
WWW Municipal Solid Waste Landfills	X	X	X	X	X	X	X	X
AAAA Small Municipal Waste Combustion Units for which Construction is Commenced after August 30, 1999 or for which Modification or Reconstruction is Commenced after June 6, 2001	X	X	.....	X	X	X	.....	X
BBBB Small Municipal Waste Combustion Units Constructed on or before August 30, 1999 (Emission Guidelines and Compliance Times).								
CCCC Commercial and Industrial Solid Waste Incineration Units for which Construction is Commenced after November, 30, 1999 or for which Modification or Reconstruction is Commenced on or after June 1, 2001	X	X	.....	X	X	X	.....	X

NSPS SUBPARTS DELEGATED TO WASHINGTON AIR AGENCIES—Continued

Subpart [1]	Washington							
	Ecology [2]	BCAA [3]	NWAPA [4]	ORCAA [5]	PSCAA [6]	SCAPCA [7]	SWCAA [8]	YRCAA [9]
DDDD Commercial and Industrial Solid Waste Incineration Units that Commenced Construction on or before November 30, 1999 (Emission Guidelines and Compliance Times).								

[1] Any authority within any subpart of this part that is not delegable, is not delegated. Please refer to Attachment B to the delegation letters for a listing of the NSPS authorities excluded from delegation.
[2] Washington State Department of Ecology, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.
[3] Benton Clean Air Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.
[4] Northwest Air Pollution Authority, for all NSPS delegated, as in effect on July 1, 2000.
[5] Olympic Regional Clean Air Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.
[6] Puget Sound Clean Air Authority, for all NSPS delegated, as in effect on July 1, 2002.
[7] Spokane County Air Pollution Control Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.
[8] Southwest Clean Air Agency, for all NSPS delegated, as in effect on July 1, 2000.
[9] Yakima Regional Clean Air Authority, for 40 CFR 60.17(h)(1), (h)(2), (h)(3) and 40 CFR part 60, subpart AAAA, as in effect on June 6, 2001; for 40 CFR part 60, subpart CCCC, as in effect on June 1, 2001; and for all other NSPS delegated, as in effect February 20, 2001.
[10] Subpart S of this part is not delegated to local agencies in Washington because the Washington State Department of Ecology retains sole authority to regulate Primary Aluminum Plants, pursuant to Washington Administrative Code 173–415–010.
[11] Subpart BB of this part is not delegated to local agencies in Washington because the Washington State Department of Ecology retains sole authority to regulate Kraft and Sulfite Pulping Mills, pursuant to Washington State Administrative Code 173–405–012 and 173–410–012.

(XX) State of West Virginia, Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE., Charleston, West Virginia 25304.

(YY) State of Wisconsin: Wisconsin Department of Natural Resouces, 101 South Webster St., P.O. Box 7921, Madison, Wisconsin 53707–7921.

(ZZ) State of Wyoming, Department of Environmental Quality, Air Quality Division, Herschler Building, 122 West 25th Street, Cheyenne, WY 82002.

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

(AAA) Territory of Guam: Guam Environmental Protection Agency, P.O. Box 22439 GMF, Barrigada, Guam 96921.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(BBB) Commonwealth of Puerto Rico: Commonwealth of Puerto Rico Environmental Quality Board, P.O. Box 11488, Santurce, PR 00910, Attention: Air Quality Area Director (see table under § 60.4(b)(FF)(1)).

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

(DDD) American Samoa: American Samoa Environmental Protection Agency, P.O. Box PPA, Pago Pago, American Samoa 96799.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(EEE) Commonwealth of the Northern Mariana Islands: CNMI Division of Environmental Quality, P.O. Box 501304, Saipan, MP 96950.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(c) The following is a table indicating the delegation status of New Source Performance Standards for Region VIII.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS

[(NSPS) for Region VIII]

Subpart	CO	MT	ND	SD	UT	WY
A—General Provisions	(*)	(*)	(*)	(*)	(*)	(*)
D—Fossil Fuel Fired Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
Da—Electric Utility Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
Db—Industrial-Commercial—Institutional Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
Dc—Industrial–Commercial–Institutional Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
E—Incinerators	(*)	(*)	(*)	(*)	(*)	(*)
Ea—Municipal Waste Combustors	(*)	(*)	(*)	(*)	(*)	(*)
Eb—Large Municipal Waste Combustors		(*)		(*)	(*)	(*)
Ec—Hospital/Medical/Infectious Waste Incinerators	(*)	(*)	(*)	(*)	(*)	(*)
F—Portland Cement Plants	(*)	(*)	(*)	(*)	(*)	(*)
G—Nitric Acid Plants	(*)	(*)	(*)		(*)	(*)
H—Sulfuric Acid Plants	(*)	(*)	(*)		(*)	(*)
I—Asphalt Concrete Plants	(*)	(*)	(*)	(*)	(*)	(*)
J—Petroleum Refineries	(*)	(*)	(*)		(*)	(*)
K—Petroleum Storage Vessels (after 6/11/73 & prior to 5/19/78)	(*)	(*)	(*)	(*)	(*)	(*)
Ka—Petroleum Storage Vessels (after 5/18/78 & prior to 7/23/84)	(*)	(*)	(*)	(*)	(*)	(*)
Kb—Petroleum Storage Vessels (after 7/23/84)	(*)	(*)	(*)	(*)	(*)	(*)
L—Secondary Lead Smelters	(*)	(*)	.....	.....	(*)	(*)
M—Secondary Brass and Bronze Production. Plants	(*)	(*)	.....	.....	(*)	(*)
N—Primary Emissions from Basic Oxygen Process Furnaces (after 6/11/73)	(*)	(*)	.....	.....	(*)	(*)
Na—Secondary Emissions from Basic Oxygen Process Furnaces (after 1/20/83)	(*)	(*)	.....	.....	(*)	(*)
O—Sewage Treatment Plants	(*)	(*)	(*)	(*)	(*)	(*)
P—Primary Copper Smelters	(*)	(*)	.....	.....	(*)	(*)
Q—Primary Zinc Smelters	(*)	(*)	.....	.....	(*)	(*)
R—Primary Lead Smelters	(*)	(*)	.....	.....	(*)	(*)
S—Primary Aluminum Reduction Plants	(*)	(*)	.....	.....	(*)	(*)
T—Phosphate Fertilizer Industry: Wet Process Phosphoric Plants	(*)	(*)	(*)		(*)	(*)
U—Phosphate Fertilizer Industry: Superphosphoric Acid Plants	(*)	(*)	(*)		(*)	(*)
V—Phosphate Fertilizer Industry: Diammonium Phosphate Plants	(*)	(*)	(*)		(*)	(*)
W—Phosphate Fertilizer Industry: Triple Superphosphate Plants	(*)	(*)	(*)		(*)	(*)
X—Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	(*)	(*)	(*)		(*)	(*)
Y—Coal Preparation Plants	(*)	(*)	(*)	(*)	(*)	(*)
Z—Ferroalloy Production Facilities	(*)	(*)	(*)		(*)	(*)
AA—Steel Plants: Electric Arc Furnaces (10/21/74–8/17/83)	(*)	(*)	(*)		(*)	(*)
AAa—Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels (after 8/7/83)	(*)	(*)	(*)		(*)	(*)
BB—Kraft Pulp Mills	(*)	(*)	.....	.....	(*)	(*)
CC—Glass Manufacturing Plants	(*)	(*)	(*)		(*)	(*)
DD—Grain Elevator	(*)	(*)	(*)	(*)	(*)	(*)
EE—Surface Coating of Metal Furniture	(*)	(*)	(*)		(*)	(*)
GG—Stationary Gas Turbines	(*)	(*)	(*)	(*)	(*)	(*)
HH—Lime Manufacturing Plants	(*)	(*)	(*)	(*)	(*)	(*)
KK—Lead-Acid Battery Manufacturing Plants	(*)	(*)	(*)		(*)	(*)
LL—Metallic Mineral Processing Plants	(*)	(*)	(*)	(*)	(*)	(*)
MM—Automobile & Light Duty Truck Surface Coating Operations	(*)	(*)	(*)		(*)	(*)
NN—Phosphate Rock Plants	(*)	(*)	(*)		(*)	(*)
PP—Ammonium Sulfate Manufacturing	(*)	(*)	(*)		(*)	(*)
QQ—Graphic Arts Industry: Publication Rotogravure Printing	(*)	(*)	(*)	(*)	(*)	(*)
RR—Pressure Sensitive Tape & Label Surface Coating	(*)	(*)	(*)	(*)	(*)	(*)
SS—Industrial Surface Coating: Large Applications	(*)	(*)	(*)		(*)	(*)
TT—Metal Coil Surface Coating	(*)	(*)	(*)		(*)	(*)
UU—Asphalt Processing & Asphalt Roofing Manufacture	(*)	(*)	(*)		(*)	(*)

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS—Continued

[(NSPS) for Region VIII]

Subpart	CO	MT	ND	SD	UT	WY
VV—Synthetic Organic Chemicals Manufacturing: Equipment Leaks of VOC	(*)	(*)	(*)	(*)	(*)	(*)
WW—Beverage Can Surface Coating Industry	(*)	(*)	(*)		(*)	(*)
XX—Bulk Gasoline Terminals	(*)	(*)	(*)	(*)	(*)	(*)
AAA—Residential Wood Heaters	(*)	(*)	(*)	(*)	(*)	(*)
BBB—Rubber Tires	(*)	(*)	(*)		(*)	(*)
DDD—VOC Emissions from Polymer Manufacturing Industry	(*)	(*)	(*)		(*)	(*)
FFF—Flexible Vinyl & Urethane Coating & Printing	(*)	(*)	(*)		(*)	(*)
GGG—Equipment Leaks of VOC in Petroleum Refineries	(*)	(*)	(*)		(*)	(*)
HHH—Synthetic Fiber Production	(*)	(*)	(*)		(*)	(*)
III—VOC Emissions from the Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes		(*)	(*)		(*)	(*)
JJJ—Petroleum Dry Cleaners	(*)	(*)	(*)	(*)	(*)	(*)
KKK—Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	(*)	(*)	(*)		(*)	(*)
LLL—Onshore Natural Gas Processing: SO_2 Emissions	(*)	(*)	(*)		(*)	(*)
NNN—VOC Emissions from the Synthetic Organic Chemical Manufacturing Industry Distillation Operations	(*)	(*)	(*)	(*)	(*)	(*)
OOO—Nonmetallic Mineral Processing Plants	(*)	(*)	(*)	(*)	(*)	(*)
PPP—Wool Fiberglass Insulation Manufacturing Plants	(*)	(*)	(*)		(*)	(*)
QQQ—VOC Emissions from Petroleum Refinery Wastewater Systems	(*)	(*)	(*)		(*)	(*)
RRR—VOC Emissions from Synthetic Organic Chemistry Manufacturing Industry (SOCMI) Reactor Processes	(*)	(*)	(*)	(*)	(*)	(*)
SSS—Magnetic Tape Industry	(*)	(*)	(*)	(*)	(*)	(*)
TTT—Plastic Parts for Business Machine Coatings	(*)	(*)	(*)		(*)	(*)
UUU—Calciners and Dryers in Mineral Industries	(*)	(*)	(*)	(*)	(*)	(*)
VVV—Polymeric Coating of Supporting Substrates	(*)	(*)	(*)		(*)	(*)
WWW—Municipal Solid Waste Landfills	(*)	(*)	(*)	(*)	(*)	(*)
AAAA-Small Municipal Waste Combustors	.....	(*)	(*)	.....	(*)	(*)
CCCC-Commercial and Industrial Solid Waste Incineration Units	.....	(*)	(*)	.....	(*)	(*)
EEEE—Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced On or After June 16, 2006	.....	.....	.....	.....	.....	(*)

(*) Indicates approval of State regulation.

(d) The following tables list the specific part 60 standards that have been delegated unchanged to the air pollution control agencies in Region IX. The (X) symbol is used to indicate each standard that has been delegated. The following provisions of this subpart are not delegated: §§ 60.4(b), 60.8(b), 60.9, 60.11(b), 60.11(e), 60.13(a), 60.13(d)(2), 60.13(g), 60.13(i).

(1) *Arizona*. The following table identifies delegations for Arizona:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR ARIZONA

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR ARIZONA—Continued

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X	X	X	X
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994.	X	X	X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	X	X	X	
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011.	.....	.....	.....	
H	Sulfuric Acid Plant	X	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.	.....	X	.....	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	X	X	X
Y	Coal Preparation and Processing Plants	X	X	X	X
Z	Ferroalloy Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X	X	X	X
BB	Kraft Pulp Mills	X	X	X	X
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	X
FF	(Reserved)	.....	.....	.....	
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	X
NN	Phosphate Rock Plants	X	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	X
SS	Industrial Surface Coating: Large Appliances	X	X	X	X
TT	Metal Coil Surface Coating	X	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing.	X	X	X	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006.	X	X	.....	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR ARIZONA—Continued

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
WW	Beverage Can Surface Coating Industry	X	X	X	X
XX	Bulk Gasoline Terminals	X	X	X	X
AAA	New Residential Wood Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X	X	X	X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.	X	X		
HHH	Synthetic Fiber Production Facilities	X	X	X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X	X	X	X
JJJ	Petroleum Dry Cleaners	X	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X	X	X	X
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X	X	X	X
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	X	X		
SSS	Magnetic Tape Coating Facilities	X	X	X	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X	X	X	X
UUU	Calciners and Dryers in Mineral Industries	X	X	X	
VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X	
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001.	X	X	X	
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	X	X	X	
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.	X	X		
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines	X	X		
JJJJ	Stationary Spark Ignition Internal Combustion Engines		X		
KKKK	Stationary Combustion Turbines	X	X		
LLLL	New Sewage Sludge Incineration Units				
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution.				

(2) *California*. The following tables identify delegations for each of the local air pollution control agencies of California.

(i) Delegations for Amador County Air Pollution Control District, Antelope Valley Air Quality Management District, Bay Area Air Quality Management District, and Butte County Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR AMADOR COUNTY APCD, ANTELOPE VALLEY AQMD, BAY AREA AQMD, AND BUTTE COUNTY AQMD

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley AQMD	Bay Area AQMD	Butte County AQMD
A	General Provisions	.....	X	.....	
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	.....	X	X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	.....	X	X	
Db	Industrial-Commercial-Institutional Steam Generating Units	.....	X	X	
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	.....	X	X	
E	Incinerators	.....	X	X	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	.....	X	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994.	.....	X	.....	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	.....	X	.....	
F	Portland Cement Plants	.....	X	X	
G	Nitric Acid Plants	.....	X	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011.	.....	.....	.....	
H	Sulfuric Acid Plant	.....	X	X	
I	Hot Mix Asphalt Facilities	.....	X	X	
J	Petroleum Refineries	.....	X	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.	.....	X	.....	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	.....	X	X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	.....	X	X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	.....	X	X	
L	Secondary Lead Smelters	.....	X	X	
M	Secondary Brass and Bronze Production Plants	.....	X	X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	.....	X	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	.....	X	X	
O	Sewage Treatment Plants	.....	X	X	
P	Primary Copper Smelters	.....	X	X	
Q	Primary Zinc Smelters	.....	X	X	
R	Primary Lead Smelters	.....	X	X	
S	Primary Aluminum Reduction Plants	.....	X	X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	.....	X	.....	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	.....	X	X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	.....	X	X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	.....	X	X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	.....	X	X	
Y	Coal Preparation and Processing Plants	.....	X	X	
Z	Ferroalloy Production Facilities	.....	X	X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	.....	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	.....	X	X	
BB	Kraft Pulp Mills	.....	X	X	
CC	Glass Manufacturing Plants	.....	X	X	
DD	Grain Elevators	.....	X	X	
EE	Surface Coating of Metal Furniture	.....	X	X	
FF	(Reserved)	.....	.....	.....	
GG	Stationary Gas Turbines	.....	X	X	
HH	Lime Manufacturing Plants	.....	X	X	
KK	Lead-Acid Battery Manufacturing Plants	.....	X	X	
LL	Metallic Mineral Processing Plants	.....	X	X	
MM	Automobile and Light Duty Trucks Surface Coating Operations	.....	X	X	
NN	Phosphate Rock Plants	.....	X	X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR AMADOR COUNTY APCD, ANTELOPE VALLEY AQMD, BAY AREA AQMD, AND BUTTE COUNTY AQMD—Continued

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley AQMD	Bay Area AQMD	Butte County AQMD
PP	Ammonium Sulfate Manufacture		X	X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing		X	X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations		X	X	
SS	Industrial Surface Coating: Large Appliances		X	X	
TT	Metal Coil Surface Coating		X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture		X	X	
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing.		X	X	
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006.		X		
WW	Beverage Can Surface Coating Industry		X	X	
XX	Bulk Gasoline Terminals				
AAA	New Residential Wood Heaters		X	X	
BBB	Rubber Tire Manufacturing Industry		X	X	
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.		X	X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing		X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries		X	X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.		X		
HHH	Synthetic Fiber Production Facilities		X	X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.		X		
JJJ	Petroleum Dry Cleaners		X	X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.		X	X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions		X		
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.		X	X	
OOO	Nonmetallic Mineral Processing Plants		X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X		
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.		X		
SSS	Magnetic Tape Coating Facilities		X	X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.		X	X	
UUU	Calciners and Dryers in Mineral Industries		X	X	
VVV	Polymeric Coating of Supporting Substrates Facilities		X	X	
WWW	Municipal Solid Waste Landfills		X		
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001.		X		
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.		X		
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.		X		
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines		X		
JJJJ	Stationary Spark Ignition Internal Combustion Engines		X		
KKKK	Stationary Combustion Turbines		X		
LLLL	New Sewage Sludge Incineration Units				
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution.				

(ii) [Reserved]

(iii) Delegations for Glenn County Air Pollution Control District, Great Basin Unified Air Pollution Control District, Imperial County Air Pollution Control District, and Kern County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR GLENN COUNTY APCD, GREAT BASIN UNIFIED APCD, IMPERIAL COUNTY APCD, AND KERN COUNTY APCD

	Subpart	Air pollution control agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
A	General Provisions		X		X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.		X		X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.		X		X
Db	Industrial-Commercial-Institutional Steam Generating Units		X		X
Dc	Small Industrial Steam Generating Units		X		X
E	Incinerators		X		X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.		X		
Eb	Municipal Waste Combustors Constructed After September 20, 1994.				
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.				
F	Portland Cement Plants		X		X
G	Nitric Acid Plants		X		X
H	Sulfuric Acid Plants		X		
I	Hot Mix Asphalt Facilities		X		X
J	Petroleum Refineries		X		X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.		X		X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.		X		X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.		X		X
L	Secondary Lead Smelters		X		X
M	Secondary Brass and Bronze Production Plants		X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.		X		X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.		X		X
O	Sewage Treatment Plants		X		X
P	Primary Copper Smelters		X		X
Q	Primary Zinc Smelters		X		X
R	Primary Lead Smelters		X		X
S	Primary Aluminum Reduction Plants		X		X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X		X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X		X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X		X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X		X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.		X		X
Y	Coal Preparation Plants		X		X
Z	Ferroalloy Production Facilities		X		X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.		X		X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.		X		X
BB	Kraft pulp Mills		X		X
CC	Glass Manufacturing Plants		X		X
DD	Grain Elevators		X		X
EE	Surface Coating of Metal Furniture		X		X
FF	(Reserved).				
GG	Stationary Gas Turbines		X		X
HH	Lime Manufacturing Plants		X		X
KK	Lead-Acid Battery Manufacturing Plants		X		X
LL	Metallic Mineral Processing Plants		X		X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR GLENN COUNTY APCD, GREAT BASIN UNIFIED APCD, IMPERIAL COUNTY APCD, AND KERN COUNTY APCD—Continued

	Subpart	Air pollution control agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
MM	Automobile and Light Duty Trucks Surface Coating Operations		X		X
NN	Phosphate Rock Plants		X		X
PP	Ammonium Sulfate Manufacture		X		X
QQ	Graphic Arts Industry: Publication Rotogravure Printing		X		X
RR	Pressure Sensitive Tape and Label Surface Coating Operations		X		X
SS	Industrial Surface Coating: Large Appliances		X		X
TT	Metal Coil Surface Coating		X		X
UU	Asphalt Processing and Asphalt Roofing Manufacture		X		X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.		X		X
WW	Beverage Can Surface Coating Industry		X		X
XX	Bulk Gasoline Terminals.				
AAA	New Residential Wool Heaters		X		X
BBB	Rubber Tire Manufacturing Industry		X		X
CCC	(Reserved).				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.		X		X
EEE	(Reserved).				
FFF	Flexible Vinyl and Urethane Coating and Printing		X		X
GGG	Equipment Leaks of VOC in Petroleum Refineries		X		X
HHH	Synthetic Fiber Production Facilities		X		X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.		X		X
JJJ	Petroleum Dry Cleaners		X		X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.		X		X
LLL	Onshore Natural Gas Processing: SO2 Emissions				X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.		X		X
OOO	Nonmetallic Mineral Processing Plants		X		X
PPP	Wool Fiberglass Insulation Manufacturing Plants		X		X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X		X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.				X
SSS	Magnetic Tape Coating Facilities		X		X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.		X	X	
UUU	Calciners and Dryers in Mineral Industries		X		X
VVV	Polymeric Coating of Supporting Substrates Facilities		X		X
WWW	Municipal Solid Waste Landfills				X

(iv) Delegations for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR LAKE COUNTY AIR QUALITY MANAGEMENT DISTRICT, LASSEN COUNTY AIR POLLUTION CONTROL DISTRICT, MARIPOSA COUNTY AIR POLLUTION CONTROL DISTRICT, AND MENDOCINO COUNTY AIR POLLUTION CONTROL DISTRICT

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
A	General Provisions	X			X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X			X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR LAKE COUNTY AIR QUALITY MANAGEMENT DISTRICT, LASSEN COUNTY AIR POLLUTION CONTROL DISTRICT, MARIPOSA COUNTY AIR POLLUTION CONTROL DISTRICT, AND MENDOCINO COUNTY AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	.....	.....	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X			
Dc	Small Industrial Steam Generating Units	X	.....	.....	X
E	Incinerators	X	.....	.....	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X	.....	.....	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994.				
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.				
F	Portland Cement Plants	X	.....	.....	X
G	Nitric Acid Plants	X	.....	.....	X
H	Sulfuric Acid Plants	X	.....	.....	X
I	Hot Mix Asphalt Facilities	X	.....	.....	X
J	Petroleum Refineries	X	.....	.....	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	.....	.....	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	.....	.....	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	.....	.....	X
L	Secondary Lead Smelters	X	.....	.....	X
M	Secondary Brass and Bronze Production Plants	X	.....	.....	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	.....	.....	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	.....	.....	X
O	Sewage Treatment Plants	X	.....	.....	X
P	Primary Copper Smelters	X	.....	.....	X
Q	Primary Zinc Smelters	X	.....	.....	X
R	Primary Lead Smelters	X	.....	.....	X
S	Primary Aluminum Reduction Plants	X	.....	.....	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	.....	.....	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	.....	.....	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	.....	.....	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	.....	.....	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	.....	.....	X
Y	Coal Preparation Plants	X	.....	.....	X
Z	Ferroalloy Production Facilities	X	.....	.....	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	.....	.....	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X	.....	.....	X
BB	Kraft Pulp Mills	X	.....	.....	X
CC	Glass Manufacturing Plants	X	.....	.....	X
DD	Grain Elevators	X	.....	.....	X
EE	Surface Coating of Metal Furniture	X	.....	.....	X
FF	(Reserved).				
GG	Stationary Gas Turbines	X	.....	.....	X
HH	Lime Manufacturing Plants	X	.....	.....	X
KK	Lead-Acid Battery Manufacturing Plants	X	.....	.....	X
LL	Metallic Mineral Processing Plants	X	.....	.....	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	.....	.....	X
NN	Phosphate Rock Plants	X	.....	.....	X
PP	Ammonium Sulfate Manufacture	X	.....	.....	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	.....	.....	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	.....	.....	X
SS	Industrial Surface Coating: Large Appliances	X	.....	.....	X
TT	Metal Coil Surface Coating	X	.....	.....	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR LAKE COUNTY AIR QUALITY MANAGEMENT DISTRICT, LASSEN COUNTY AIR POLLUTION CONTROL DISTRICT, MARIPOSA COUNTY AIR POLLUTION CONTROL DISTRICT, AND MENDOCINO COUNTY AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
UU	Asphalt Processing and Asphalt Roofing Manufacture	X			X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	X			X
WW	Beverage Can Surface Coating Industry	X			X
XX	Bulk Gasoline Terminals.				
AAA	New Residential Wool Heaters	X			X
BBB	Rubber Tire Manufacturing Industry	X			X
CCC	(Reserved).				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X			X
EEE	(Reserved).				
FFF	Flexible Vinyl and Urethane Coating and Printing	X			X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X			X
HHH	Synthetic Fiber Production Facilities	X			X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X			X
JJJ	Petroleum Dry Cleaners	X			X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X			X
LLL	Onshore Natural Gas Processing: SO2 Emissions	X			X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X			X
OOO	Nonmetallic Mineral Processing Plants	X			X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X			X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X			X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	X			
SSS	Magnetic Tape Coating Facilities	X			X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.				
UUU	Calciners and Dryers in Mineral Industries	X			X
VVV	Polymeric Coating of Supporting Substrates Facilities	X			X
WWW	Municipal Solid Waste Landfills	X			

(v) Delegations for Modoc Air Pollution Control District, Mojave Desert Air Quality Management District, Monterey Bay Unified Air Pollution Control District and North Coast Unified Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR MODOC COUNTY APCD, MOJAVE DESERT AQMD, MONTEREY BAY UNIFIED APCD, AND NORTH COAST UNIFIED AQMD

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial-Commercial-Institutional Steam Generating Units		X	X	
E	Incinerators	X	X	X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR MODOC COUNTY APCD, MOJAVE DESERT AQMD, MONTEREY BAY UNIFIED APCD, AND NORTH COAST UNIFIED AQMD—Continued

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	.....	X	.....	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994.	.....	X	.....	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	.....	X	.....	
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011.	.....	.....	.....	
H	Sulfuric Acid Plant	X	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.	.....	X	.....	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	X	X	X
Y	Coal Preparation and Processing Plants	X	X	X	X
Z	Ferroalloy Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X	X	X	X
BB	Kraft Pulp Mills	X	X	X	X
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	X
FF	(Reserved)	.....	.....	.....	
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	X
NN	Phosphate Rock Plants	X	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	X
SS	Industrial Surface Coating: Large Appliances	X	X	X	X
TT	Metal Coil Surface Coating	X	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR MODOC COUNTY APCD, MOJAVE DESERT AQMD, MONTEREY BAY UNIFIED APCD, AND NORTH COAST UNIFIED AQMD—Continued

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing.	X	X	X	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006.	.....	X	.....	
WW	Beverage Can Surface Coating Industry	X	X	X	X
XX	Bulk Gasoline Terminals	.....	.....	.....	
AAA	New Residential Wood Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	X
CCC	(Reserved)	.....	.....	.....	
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X	X	X	
EEE	(Reserved)	.....	.....	.....	
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.	.....	X	.....	
HHH	Synthetic Fiber Production Facilities	X	X	X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	.....	X	.....	
JJJ	Petroleum Dry Cleaners	X	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X	X	X	X
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	X
MMM	(Reserved)	.....	.....	.....	
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X	X	X	
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	.....	X	.....	
SSS	Magnetic Tape Coating Facilities	X	X	X	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X	X	X	X
UUU	Calciners and Dryers in Mineral Industries	.....	X	X	
VVV	Polymeric Coating of Supporting Substrates Facilities	.....	X	X	X
WWW	Municipal Solid Waste Landfills	.....	X	.....	
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001.	.....	X	.....	
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	.....	X	.....	
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.	.....	X	.....	
GGGG	(Reserved)	.....	.....	.....	
HHHH	(Reserved)	.....	.....	.....	
IIII	Stationary Compression Ignition Internal Combustion Engines	.....	X	.....	
JJJJ	Stationary Spark Ignition Internal Combustion Engines	.....	X	.....	
KKKK	Stationary Combustion Turbines	.....	X	.....	
LLLL	New Sewage Sludge Incineration Units	.....	.....	.....	
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution.	.....	.....	.....	.....

(vi) Delegations for Northern Sierra Air Quality Management District, Northern Sonoma County Air Pollution Control District, Placer County

Air Pollution Control District, and Sacramento Metropolitan Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT, NORTHERN SONOMA COUNTY AIR POLLUTION CONTROL DISTRICT, PLACER COUNTY AIR POLLUTION CONTROL DISTRICT, AND SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metropolitan AQMD
A	General Provisions		X		X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.		X		X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.		X		X
Db	Industrial-Commercial-Institutional Steam Generating Units				X
Dc	Small Industrial Steam Generating Units				X
E	Incinerators		X		X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.				X
Eb	Municipal Waste Combustors Constructed After September 20, 1994.				X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.				X
F	Portland Cement Plants		X		X
G	Nitric Acid Plants		X		X
H	Sulfuric Acid Plants		X		X
I	Hot Mix Asphalt Facilities		X		X
J	Petroleum Refineries		X		X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.		X		X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.		X		X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.				X
L	Secondary Lead Smelters		X		X
M	Secondary Brass and Bronze Production Plants		X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.		X		X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.				X
O	Sewage Treatment Plants		X		X
P	Primary Copper Smelters		X		X
Q	Primary Zinc Smelters		X		X
R	Primary Lead Smelters		X		X
S	Primary Aluminum Reduction Plants		X		X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X		X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X		X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X		X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X		X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.		X		X
Y	Coal Preparation Plants		X		X
Z	Ferroalloy Production Facilities		X		X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.		X		X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.				X
BB	Kraft pulp Mills		X		X
CC	Glass Manufacturing Plants		X		X
DD	Grain Elevators		X		X
EE	Surface Coating of Metal Furniture				X
FF	(Reserved).				
GG	Stationary Gas Turbines		X		X
HH	Lime Manufacturing Plants		X		X
KK	Lead-Acid Battery Manufacturing Plants				X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT, NORTHERN SONOMA COUNTY AIR POLLUTION CONTROL DISTRICT, PLACER COUNTY AIR POLLUTION CONTROL DISTRICT, AND SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metropolitan AQMD
LL	Metallic Mineral Processing Plants				X
MM	Automobile and Light Duty Trucks Surface Coating Operations		X		X
NN	Phosphate Rock Plants				X
PP	Ammonium Sulfate Manufacture		X		X
QQ	Graphic Arts Industry: Publication Rotogravure Printing				X
RR	Pressure Sensitive Tape and Label Surface Coating Operations				X
SS	Industrial Surface Coating: Large Appliances				X
TT	Metal Coil Surface Coating				X
UU	Asphalt Processing and Asphalt Roofing Manufacture				X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.				X
WW	Beverage Can Surface Coating Industry				X
XX	Bulk Gasoline Terminals.				
AAA	New Residential Wool Heaters				X
BBB	Rubber Tire Manufacturing Industry				X
CCC	(Reserved).				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.				X
EEE	(Reserved).				
FFF	Flexible Vinyl and Urethane Coating and Printing				X
GGG	Equipment Leaks of VOC in Petroleum Refineries				X
HHH	Synthetic Fiber Production Facilities				X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.				X
JJJ	Petroleum Dry Cleaners				X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.				X
LLL	Onshore Natural Gas Processing: SO2 Emissions				X
MMM	(Reserved).				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.				X
OOO	Nonmetallic Mineral Processing Plants				X
PPP	Wool Fiberglass Insulation Manufacturing Plants				X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems				X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.				X
SSS	Magnetic Tape Coating Facilities				X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.				X
UUU	Calciners and Dryers in Mineral Industries				X
VVV	Polymeric Coating of Supporting Substrates Facilities				X
WWW	Municipal Solid Waste Landfills				X

(vii) Delegations for San Diego County Air Pollution Control District, San Joaquin Valley Unified Air Pollution Control District, San Luis Obispo County Air Pollution Control District, and Santa Barbara County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SAN DIEGO COUNTY APCD, SAN JOAQUIN VALLEY UNIFIED APCD, SAN LUIS OBISPO COUNTY APCD, AND SANTA BARBARA COUNTY APCD

	Subpart	Air pollution control agency			
		San Diego County APCD	San Joaquin Valley Unified APCD	San Luis Obispo County APCD	Santa Barbara County APCD
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X	X	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994.	X	X	.....	X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	X	.....	.....	X
F	Portland Cement Plants	X	X	X	
G	Nitric Acid Plants	X	X	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011.	.....	.....	.....	
H	Sulfuric Acid Plant	X	X	X	
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.	.....	.....	.....	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	X	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	X	X	
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	
Q	Primary Zinc Smelters	X	X	X	
R	Primary Lead Smelters	X	X	X	
S	Primary Aluminum Reduction Plants	X	X	X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	X	X	
Y	Coal Preparation and Processing Plants	X	X	X	
Z	Ferroalloy Production Facilities	X	X	X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X	X	X	
BB	Kraft Pulp Mills	X	X	X	
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	
FF	(Reserved)	.....	.....	.....	
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SAN DIEGO COUNTY APCD, SAN JOAQUIN VALLEY UNIFIED APCD, SAN LUIS OBISPO COUNTY APCD, AND SANTA BARBARA COUNTY APCD—Continued

	Subpart	Air pollution control agency			
		San Diego County APCD	San Joaquin Valley Unified APCD	San Luis Obispo County APCD	Santa Barbara County APCD
LL	Metallic Mineral Processing Plants	X	X	X	
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	
NN	Phosphate Rock Plants	X	X	X	
PP	Ammonium Sulfate Manufacture	X	X	X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X	
TT	Metal Coil Surface Coating	X	X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing.	X	X	X	
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006.				X
WW	Beverage Can Surface Coating Industry	X	X	X	
XX	Bulk Gasoline Terminals				
AAA	New Residential Wood Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X	X		
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.				X
HHH	Synthetic Fiber Production Facilities	X	X	X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X	X		
JJJ	Petroleum Dry Cleaners	X	X	X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X	X	X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	X	
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X	X		
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	X	X	X	
SSS	Magnetic Tape Coating Facilities	X	X	X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X	X	X	
UUU	Calciners and Dryers in Mineral Industries	X	X	X	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X	X
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001.	X			X
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	X			X
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.	X			X
GGGG	(Reserved)				
HHHH	(Reserved)				
IIII	Stationary Compression Ignition Internal Combustion Engines				X
JJJJ	Stationary Spark Ignition Internal Combustion Engines				X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SAN DIEGO COUNTY APCD, SAN JOAQUIN VALLEY UNIFIED APCD, SAN LUIS OBISPO COUNTY APCD, AND SANTA BARBARA COUNTY APCD—Continued

	Subpart	Air pollution control agency			
		San Diego County APCD	San Joaquin Valley Unified APCD	San Luis Obispo County APCD	Santa Barbara County APCD
KKKK	Stationary Combustion Turbines	X	.....	.....	X
LLLL	New Sewage Sludge Incineration Units	.....	.....	.....	
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution.	.....	.....	.....	.....

(viii) Delegations for Shasta County Air Quality Management District, Siskiyou County Air Pollution Control District, South Coast Air Quality Management District, and Tehama County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SHASTA COUNTY AQMD, SISKIYOU COUNTY APCD, SOUTH COAST AQMD, AND TEHAMA COUNTY APCD

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
A	General Provisions	X	X	X	
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	.....	X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	.....	.....	X	
Db	Industrial-Commercial-Institutional Steam Generating Units	.....	.....	X	
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	.....	.....	X	
E	Incinerators	X	.....	X	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	.....	.....	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994.	.....	.....	X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	.....	.....	X	
F	Portland Cement Plants	X	.....	X	
G	Nitric Acid Plants	X	.....	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011.	.....	.....	.....	
H	Sulfuric Acid Plant	X	.....	X	
I	Hot Mix Asphalt Facilities	X	.....	X	
J	Petroleum Refineries	X	.....	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.	.....	.....	X	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	.....	X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	.....	.....	X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	.....	.....	X	
L	Secondary Lead Smelters	X	.....	X	
M	Secondary Brass and Bronze Production Plants	X	.....	X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	.....	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	.....	.....	X	
O	Sewage Treatment Plants	X	.....	X	
P	Primary Copper Smelters	X	.....	X	
Q	Primary Zinc Smelters	X	.....	X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SHASTA COUNTY AQMD, SISKIYOU COUNTY APCD, SOUTH COAST AQMD, AND TEHAMA COUNTY APCD—Continued

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
R	Primary Lead Smelters	X		X	
S	Primary Aluminum Reduction Plants	X		X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X		X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X		X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X		X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X		X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X		X	
Y	Coal Preparation and Processing Plants	X		X	
Z	Ferroalloy Production Facilities	X		X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X		X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.			X	
BB	Kraft Pulp Mills	X		X	
CC	Glass Manufacturing Plants			X	
DD	Grain Elevators	X		X	
EE	Surface Coating of Metal Furniture			X	
FF	(Reserved)				
GG	Stationary Gas Turbines			X	
HH	Lime Manufacturing Plants	X		X	
KK	Lead-Acid Battery Manufacturing Plants			X	
LL	Metallic Mineral Processing Plants			X	
MM	Automobile and Light Duty Trucks Surface Coating Operations			X	
NN	Phosphate Rock Plants			X	
PP	Ammonium Sulfate Manufacture			X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing			X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations			X	
SS	Industrial Surface Coating: Large Appliances			X	
TT	Metal Coil Surface Coating			X	
UU	Asphalt Processing and Asphalt Roofing Manufacture			X	
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing.			X	
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006.			X	
WW	Beverage Can Surface Coating Industry			X	
XX	Bulk Gasoline Terminals				
AAA	New Residential Wood Heaters		X	X	
BBB	Rubber Tire Manufacturing Industry		X	X	
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.			X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing			X	
GGG	Equipment Leaks of VOC in Petroleum Refineries			X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.			X	
HHH	Synthetic Fiber Production Facilities			X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.			X	
JJJ	Petroleum Dry Cleaners			X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.			X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions			X	
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.			X	
OOO	Nonmetallic Mineral Processing Plants			X	
PPP	Wool Fiberglass Insulation Manufacturing Plants			X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X	X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.			X	
SSS	Magnetic Tape Coating Facilities		X	X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SHASTA COUNTY AQMD, SISKIYOU COUNTY APCD, SOUTH COAST AQMD, AND TEHAMA COUNTY APCD—Continued

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	.....	X	X	
UUU	Calciners and Dryers in Mineral Industries	.....	.....	X	
VVV	Polymeric Coating of Supporting Substrates Facilities	.....	.....	X	
WWW	Municipal Solid Waste Landfills	.....	.....	X	
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001.	X	X	X	
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	.....	.....	X	
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.	.....	.....	X	
GGGG	(Reserved)	.....	.....	.....	
HHHH	(Reserved)	.....	.....	.....	
IIII	Stationary Compression Ignition Internal Combustion Engines	.....	.....	X	
JJJJ	Stationary Spark Ignition Internal Combustion Engines	.....	.....	X	
KKKK	Stationary Combustion Turbines	.....	.....	X	
LLLL	New Sewage Sludge Incineration Units	.....	.....	.....	
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution.	.....	.....	.....	.....

(ix) Delegations for Tuolumne County Air Pollution Control District, Ventura County Air Pollution Control District, and Yolo-Solano Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

	Subpart	Air Pollution Control Agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
A	General Provisions	X	X	
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X		
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	
Dc	Small Industrial Steam Generating Units	X		
E	Incinerators	X		
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X		
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	X		
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	X		
F	Portland Cement Plants	X		
G	Nitric Acid Plants	X		
H	Sulfuric Acid Plants	X		
I	Hot Mix Asphalt Facilities	X	X	
J	Petroleum Refineries	X	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.			
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X		

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air Pollution Control Agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X		
L	Secondary Lead Smelters	X		
M	Secondary Brass and Bronze Production Plants	X		
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X		
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X		
O	Sewage Treatment Plants	X		
P	Primary Copper Smelters	X		
Q	Primary Zinc Smelters	X		
R	Primary Lead Smelters	X		
S	Primary Aluminum Reduction Plants	X		
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.	X		
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X		
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X		
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X		
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X		
Y	Coal Preparation Plants	X		
Z	Ferroalloy Production Facilities	X		
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X		
BB	Kraft pulp Mills	X		
CC	Glass Manufacturing Plants	X		
DD	Grain Elevators	X		
EE	Surface Coating of Metal Furniture	X		
FF	(Reserved).			
GG	Stationary Gas Turbines	X		
HH	Lime Manufacturing Plants	X		
KK	Lead-Acid Battery Manufacturing Plants	X		
LL	Metallic Mineral Processing Plants	X		
MM	Automobile and Light Duty Trucks Surface Coating Operations	X		
NN	Phosphate Rock Plants	X		
PP	Ammonium Sulfate Manufacture	X		
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X		
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X		
SS	Industrial Surface Coating: Large Appliances	X		
TT	Metal Coil Surface Coating	X		
UU	Asphalt Processing and Asphalt Roofing Manufacture	X		
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	X		
VVa	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.			
WW	Beverage Can Surface Coating Industry	X		
XX	Bulk Gasoline Terminals.			
AAA	New Residential Wood Heaters	X		
BBB	Rubber Tire Manufacturing Industry	X		
CCC	(Reserved).			
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X		
EEE	(Reserved).			
FFF	Flexible Vinyl and Urethane Coating and Printing	X		
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.			
HHH	Synthetic Fiber Production Facilities	X		
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X		

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air Pollution Control Agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
JJJ	Petroleum Dry Cleaners	X		
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X		
LLL	Onshore Natural Gas Processing: SO2 Emissions	X		
MMM	(Reserved).			
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X		
OOO	Nonmetallic Mineral Processing Plants	X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants	X		
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X		
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	X		
SSS	Magnetic Tape Coating Facilities	X		
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X		
UUU	Calciners and Dryers in Mineral Industries	X		
VVV	Polymeric Coating of Supporting Substrates Facilities	X		
WWW	Municipal Solid Waste Landfills	X	X	
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001.	X		
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	X		
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.			
GGGG	(Reserved).			
IIII	Stationary Compression Ignition Internal Combustion Engines.			
JJJJ	Stationary Spark Ignition Internal Combustion Engines.			
KKKK	Stationary Combustion Turbines			

(3) *Hawaii*. The following table identifies delegations for Hawaii:
Delegation Status for New Source Performance Standards for Hawaii:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR HAWAII

	Subpart	Hawaii
A	General Provisions	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X
Dc	Small Industrial Steam Generating Units	X
E	Incinerators	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994	X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	X
F	Portland Cement Plants	X
G	Nitric Acid Plants.	
H	Sulfuric Acid Plants.	
I	Hot Mix Asphalt Facilities	X
J	Petroleum Refineries	X
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR HAWAII—Continued

	Subpart	Hawaii
L	Secondary Lead Smelters.	
M	Secondary Brass and Bronze Production Plants.	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	
O	Sewage Treatment Plants	X
P	Primary Copper Smelters.	
Q	Primary Zinc Smelters.	
R	Primary Lead Smelters.	
S	Primary Aluminum Reduction Plants.	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants.	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants.	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants.	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	
Y	Coal Preparation Plants	X
Z	Ferroalloy Production Facilities.	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X
BB	Kraft pulp Mills.	
CC	Glass Manufacturing Plants.	
DD	Grain Elevators.	
EE	Surface Coating of Metal Furniture.	
FF	(Reserved).	
GG	Stationary Gas Turbines	X
HH	Lime Manufacturing Plants.	
KK	Lead-Acid Battery Manufacturing Plants.	
LL	Metallic Mineral Processing Plants.	
MM	Automobile and Light Duty Trucks Surface Coating Operations.	
NN	Phosphate Rock Plants.	
PP	Ammonium Sulfate Manufacture.	
QQ	Graphic Arts Industry: Publication Rotogravure Printing.	
RR	Pressure Sensitive Tape and Label Surface Coating Operations.	
SS	Industrial Surface Coating: Large Appliances.	
TT	Metal Coil Surface Coating.	
UU	Asphalt Processing and Asphalt Roofing Manufacture.	
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.	
WW	Beverage Can Surface Coating Industry	X
XX	Bulk Gasoline Terminals	X
AAA	New Residential Wool Heaters.	
BBB	Rubber Tire Manufacturing Industry.	
CCC	(Reserved).	
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	
EEE	(Reserved).	
FFF	Flexible Vinyl and Urethane Coating and Printing.	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.	
HHH	Synthetic Fiber Production Facilities.	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	
JJJ	Petroleum Dry Cleaners	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	
LLL	Onshore Natural Gas Processing: SO2 Emissions.	
MMM	(Reserved).	
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X
OOO	Nonmetallic Mineral Processing Plants	X
PPP	Wool Fiberglass Insulation Manufacturing Plants.	
QQQ	VOC Emissions From Petroleum Refinery Wastewater	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	
SSS	Magnetic Tape Coating Facilities.	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	
UUU	Calciners and Dryers in Mineral Industries	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X
WWW	Municipal Solid Waste Landfills	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR HAWAII—Continued

	Subpart	Hawaii
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001.	X
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	X
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.	
GGGG	(Reserved).	
IIII	Stationary Compression Ignition Internal Combustion Engines.	
JJJJ	Stationary Spark Ignition Internal Combustion Engines.	
KKKK	Stationary Combustion Turbines	

(4) *Nevada.* The following table identifies delegations for Nevada:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NEVADA

	Subpart	Air pollution control agency		
		Nevada DEP	Clark County	Washoe County
A	General Provisions	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X	X	
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	X	X	
E	Incinerators	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X	X	
Eb	Large Municipal Waste Combustors Constructed After September 20, 1994	X	X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	X	X	
F	Portland Cement Plants	X	X	X
G	Nitric Acid Plants	X	X	
Ga	Nitric Acid Plants For Which Construction, Reconstruction or Modification Commenced After October 14, 2011.			
H	Sulfuric Acid Plant	X	X	
I	Hot Mix Asphalt Facilities	X	X	X
J	Petroleum Refineries	X	X	
Ja	Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.			
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	X	
L	Secondary Lead Smelters	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	X	
O	Sewage Treatment Plants	X	X	X
P	Primary Copper Smelters	X	X	X
Q	Primary Zinc Smelters	X	X	X
R	Primary Lead Smelters	X	X	X
S	Primary Aluminum Reduction Plants	X	X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	X	
Y	Coal Preparation and Processing Plants	X	X	X
Z	Ferroalloy Production Facilities	X	X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X	X	
BB	Kraft Pulp Mills	X	X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NEVADA—Continued

	Subpart	Air pollution control agency		
		Nevada DEP	Clark County	Washoe County
CC	Glass Manufacturing Plants	X	X	
DD	Grain Elevators	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X
FF	(Reserved)			
GG	Stationary Gas Turbines	X	X	X
HH	Lime Manufacturing Plants	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X
NN	Phosphate Rock Plants	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X
TT	Metal Coil Surface Coating	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Industry Chemicals Manufacturing.	X	X	X
VVa	Equipment Leaks of VOC in the Synthetic Organic Industry for Which Construction, Reconstruction, or Chemicals Manufacturing Modification Commenced After November 7, 2006.	X	X	
WW	Beverage Can Surface Coating Industry	X	X	
XX	Bulk Gasoline Terminals	X	X	
AAA	New Residential Wood Heaters		X	
BBB	Rubber Tire Manufacturing Industry	X	X	
CCC	(Reserved)			
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X	X	
EEE	(Reserved)			
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	
GGGa	Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.	X	X	
HHH	Synthetic Fiber Production Facilities	X	X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X	X	
JJJ	Petroleum Dry Cleaners	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X	X	
LLL	Onshore Natural Gas Processing: SO_2 Emissions	X	X	
MMM	(Reserved)			
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X	X	
OOO	Nonmetallic Mineral Processing Plants	X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	X	X	
SSS	Magnetic Tape Coating Facilities	X	X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X	X	X
UUU	Calciners and Dryers in Mineral Industries	X	X	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X
AAAA	Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commended After June 6, 2001.	X	X	X
CCCC	Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.	X	X	X
EEEE	Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.	X	X	X
GGGG	(Reserved)			
HHHH	(Reserved)			
IIII	Stationary Compression Ignition Internal Combustion Engines	X	X	X
JJJJ	Stationary Spark Ignition Internal Combustion Engines	X	X	X
KKKK	Stationary Combustion Turbines	X	X	X
LLLL	New Sewage Sludge Incineration Units		X	
OOOO	Crude Oil and Natural Gas Production, Transmission, and Distribution			

(5) *Guam*. The following table identifies delegations as of June 15, 2001:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR GUAM

	Subpart	Guam
A	General Provisions	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	
Db	Industrial-Commercial-Institutional Steam Generating Units.	
Dc	Small Industrial Steam Generating Units.	
E	Incinerators.	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	
F	Portland Cement Plants	X
G	Nitric Acid Plants.	
H	Sulfuric Acid Plants.	
I	Hot Mix Asphalt Facilities	X
J	Petroleum Refineries	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X

(e) The following lists the specific part 60 standards that have been delegated unchanged to the air pollution control agencies in Region 6.

(1) *New Mexico*. The New Mexico Environment Department has been delegated all part 60 standards promulgated by EPA, except subpart AAA—Standards of Performance for New Residential Wood Heaters, as amended in the FEDERAL REGISTER through September 1, 2002.

(2) Louisiana. The Louisiana Department of Environmental Quality has been delegated all part 60 standards promulgated by EPA, except subpart AAA—Standards for Performance for New Residential Wood Heaters, as amended in the FEDERAL REGISTER through July 1, 2008.

DELEGATION STATUS FOR PART 60 STANDARDS—STATE OF LOUISIANA

Subpart	Source category	LDEQ[1]
A	General Provisions	Yes.
D	Fossil Fueled Steam Generators (>250 MM BTU/hr). Including amendments issued January 28, 2009. (74 FR 5072).	Yes.
Da	Electric Utility Steam Generating Units (>250 MM BTU/hr). Including amendments issued January 28, 2009. (74 FR 5072).	Yes.
Db	Industrial-Commercial-Institutional Steam Generating Units (100 to 250 MM BTU/hr). Including amendments issued January 28, 2009. (74 FR 5072).	Yes.
Dc	Industrial-Commercial-Institutional Small Steam Generating Units (10 to 100 MM BTU/hr). Including amendments issued January 28, 2009. (74 FR 5072).	Yes.
E	Incinerators (>50 tons per day). Including amendments issued January 28, 2009. (74 FR 5072).	Yes.
Ea	Municipal Waste Combustors	Yes.
Eb	Large Municipal Waste Combustors	Yes.
Ec	Hospital/Medical/Infectious Waste Incinerators	Yes.
F	Portland Cement Plants	Yes.
G	Nitric Acid Plants	Yes.
H	Sulfuric Acid Plants	Yes.
I	Hot Mix Asphalt Facilities	Yes.
J	Petroleum Refineries	Yes.
Ja	Petroleum Refineries (After May 14, 2007). Including amendments issued July 28, 2008. (73 FR 43626).	Yes.
K	Storage Vessels for Petroleum Liquids (After 6/11/73 & Before 5/19/78)	Yes.
Ka	Storage Vessels for Petroleum Liquids (After 6/11/73 & Before 5/19/78)	Yes.
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Stg/Vessels) After 7/23/84.	Yes.
L	Secondary Lead Smelters	Yes.

DELEGATION STATUS FOR PART 60 STANDARDS—STATE OF LOUISIANA—Continued

Subpart	Source category	LDEQ[1]
M	Secondary Brass and Bronze Production Plants	Yes.
N	Primary Emissions from Basic Oxygen Process Furnaces (Construction Commenced After June 11, 1973).	Yes.
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities Construction is Commenced After January 20, 1983.	Yes.
O	Sewage Treatment Plants	Yes.
P	Primary Copper Smelters	Yes.
Q	Primary Zinc Smelters	Yes.
R	Primary Lead Smelters	Yes.
S	Primary Aluminum Reduction Plants	Yes.
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Plants	Yes.
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	Yes.
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	Yes.
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	Yes.
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	Yes.
Y	Coal Preparation Plants	Yes.
Z	Ferroalloy Production Facilities	Yes.
AA	Steel Plants: Electric Arc Furnaces After 10/21/74 & On or Before 8/17/83	Yes.
AAa	Steel Plants: Electric Arc Furnaces & Argon-Oxygen Decarburization Vessels After 8/07/83.	Yes.
BB	Kraft Pulp Mills	Yes.
CC	Glass Manufacturing Plants	Yes.
DD	Grain Elevators	Yes.
EE	Surface Coating of Metal Furnature	Yes.
GG	Stationary Gas Turbines	Yes.
HH	Lime Manufacturing Plants	Yes.
KK	Lead-Acid Battery Manufacturing Plants	Yes.
LL	Metallic Mineral Processing Plants	Yes.
MM	Automobile & Light Duty Truck Surface Coating Operations	Yes.
NN	Phosphate Manufacturing Plants	Yes.
PP	Ammonium Sulfate Manufacture	Yes.
QQ	Graphic Arts Industry: Publication Rotogravure Printing	Yes.
RR	Pressure Sensitive Tape and Label Surface Coating Operations	Yes.
SS	Industrial Surface Coating: Large Appliances	Yes.
TT	Metal Coil Surface Coating	Yes.
UU	Asphalt Processing and Asphalt Roofing Manufacture	Yes.
VV	VOC Equipment Leaks in the SOCMI Industry	Yes.
VVa	VOC Equipment Leaks in the SOCMI Industry (After November 7, 2006)	Yes.
XX	Bulk Gasoline Terminals	Yes.
AAA	New Residential Wood Heaters	No
BBB	Rubber Tire Manufacturing Industry	Yes.
DDD	Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry	Yes.
FFF	Flexible Vinyl and Urethane Coating and Printing	Yes.
GGG	VOC Equipment Leaks in Petroleum Refineries	Yes.
HHH	Synthetic Fiber Production	Yes.
III	VOC Emissions from the SOCMI Air Oxidation Unit Processes	Yes.
JJJ	Petroleum Dry Cleaners	Yes.
KKK	VOC Equipment Leaks From Onshore Natural Gas Processing Plants	Yes.
LLL	Onshore Natural Gas Processing: SO2 Emissions	Yes.
NNN	VOC Emissions from SOCMI Distillation Operations	Yes.
OOO	Nonmetallic Mineral Processing Plants	Yes.
PPP	Wool Fiberglass Insulation Manufacturing Plants	Yes.
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	Yes.
RRR	VOC Emissions from SOCMI Reactor Processes	Yes.
SSS	Magnetic Tape Coating Operations	Yes.
TTT	Industrial Surface Coating: Plastic Parts for Business Machines	Yes.
UUU	Calciners and Dryers in Mineral Industries	Yes.
VVV	Polymeric Coating of Supporting Substrates Facilities	Yes.
WWW	Municipal Solid Waste Landfills	Yes.
AAAA	Small Municipal Waste Combustion Units (Construction is Commenced After 8/30/99 or Modification/Reconstruction is Commenced After 6/06/2001).	Yes.
CCCC	Commercial & Industrial Solid Waste Incineration Units (Construction is Commenced After 11/30/1999 or Modification/Reconstruction is Commenced on or After 6/01/2001).	Yes.
EEEE	Other Solid Waste Incineration Units (Constructed after 12/09/2004 or Modicatation/Reconstruction is commenced on or after 06/16/2004).	Yes.
IIII	Stationary Compression Ignition Internal Combustion Engines	Yes.
JJJJ	Stationary Spark Ignition Internal Combustion Engines. Including amendments issued October 8, 2008. (73 FR 59175).	Yes.
KKKK	Stationary Combustion Turbines (Construction Commenced After 02/18/2005)	Yes

[1] The Louisiana Department of Environmental Quality (LDEQ) has been delegated all Part 60 standards promulgated by EPA, except subpart AAA—Standards of Performance for New Residential Wood Heaters—as amended in the FEDERAL REGISTER through July 1, 2008.

(3) *Albuquerque-Bernalillo County Air Quality Control Board.* The Albuquerque-Bernalillo County Air Quality Control Board has been delegated all part 60 standards promulgated by EPA, except Subpart AAA—Standards of Performance for New Residential Wood Heaters; Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills; Subpart Cc—Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills, as amended in the FEDERAL REGISTER through July 1, 2004.

[40 FR 18169, Apr. 25, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 60.4 see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§ 60.5 Determination of construction or modification.

(a) When requested to do so by an owner or operator, the Administrator will make a determination of whether action taken or intended to be taken by such owner or operator constitutes construction (including reconstruction) or modification or the commencement thereof within the meaning of this part.

(b) The Administrator will respond to any request for a determination under paragraph (a) of this section within 30 days of receipt of such request.

[40 FR 58418, Dec. 16, 1975]

§ 60.6 Review of plans.

(a) When requested to do so by an owner or operator, the Administrator will review plans for construction or modification for the purpose of providing technical advice to the owner or operator.

(b)(1) A separate request shall be submitted for each construction or modification project.

(2) Each request shall identify the location of such project, and be accompanied by technical information describing the proposed nature, size, design, and method of operation of each affected facility involved in such project, including information on any equipment to be used for measurement or control of emissions.

(c) Neither a request for plans review nor advice furnished by the Administrator in response to such request shall (1) relieve an owner or operator of legal responsibility for compliance with any provision of this part or of any applicable State or local requirement, or (2) prevent the Administrator from implementing or enforcing any provision of this part or taking any other action authorized by the Act.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974]

§ 60.7 Notification and record keeping.

(a) Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, as follows:

(1) A notification of the date construction (or reconstruction as defined under § 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

(2) [Reserved]

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

(4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in § 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.

(5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with § 60.13(c). Notification shall be postmarked not less than 30 days prior to such date.

(6) A notification of the anticipated date for conducting the opacity observations required by §60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.

(7) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by §60.8 in lieu of Method 9 observation data as allowed by §60.11(e)(5) of this part. This notification shall be postmarked not less than 30 days prior to the date of the performance test.

(b) Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) Each owner or operator required to install a continuous monitoring device shall submit excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and-or summary report form (see paragraph (d) of this section) to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each six-month period. Written reports of excess emissions shall include the following information:

(1) The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) 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.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(d) The summary report form shall contain the information and be in the format shown in figure 1 unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored at each affected facility.

(1) If the total duration of excess emissions 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 form shall be submitted and the excess emission report described in §60.7(c) need not be submitted unless requested by the Administrator.

(2) If the total duration of excess emissions 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, the summary report form and the excess emission report described in §60.7(c) shall both be submitted.

FIGURE 1—SUMMARY REPORT—GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

Pollutant (Circle One—SO_2/NO_X/TRS/H_2S/CO/Opacity)
Reporting period dates: From _____ to _____
Company:
Emission Limitation _____
Address:
Monitor Manufacturer and Model No. _____
Date of Latest CMS Certification or Audit __

Process Unit(s) Description:
Total source operating time in reporting period [1] _____

Emission data summary [1]		CMS performance summary [1]	
1. Duration of excess emissions in reporting period due to:	.....	1. CMS downtime in reporting period due to:	
a. Startup/shutdown	.....	a. Monitor equipment malfunctions.	
b. Control equipment problems	.....	b. Non-Monitor equipment malfunctions.	
c. Process problems	.....	c. Quality assurance calibration.	
d. Other known causes	.....	d. Other known causes.	
e. Unknown causes	.....	e. Unknown causes.	
2. Total duration of excess emission	.....	2. Total CMS Downtime.	
3. Total duration of excess emissions × (100) [Total source operating time].	% [2]	3. [Total CMS Downtime] × (100) [Total source operating time].	% [2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.
[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in § 60.7(c) shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

_____
Name

_____
Signature

_____
Title

_____
Date

(e)(1) Notwithstanding the frequency of reporting requirements specified in paragraph (c) of this section, an owner or operator who is required by an applicable subpart to submit excess emissions and monitoring systems performance reports (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:

(i) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected facility's excess emissions and monitoring systems reports submitted to comply with a standard under this part continually demonstrate that the facility is in compliance with the applicable standard;

(ii) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and the applicable standard; and

(iii) The Administrator does not object to a reduced frequency of reporting for the affected facility, as provided in paragraph (e)(2) of this section.

(2) The frequency of reporting of excess emissions and monitoring systems performance (and summary) 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 frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the required recordkeeping 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.

(3) As soon as monitoring data indicate that the affected facility is not in compliance with any emission limitation or operating parameter specified in the applicable standard, the frequency of reporting shall revert to the

frequency specified in the applicable standard, and the owner or operator shall submit an excess emissions and monitoring systems performance report (and summary report, if required) at the next appropriate reporting period following the noncomplying event. After demonstrating compliance with the applicable 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)(1) and (e)(2) of this section.

(f) Any owner or operator subject to the provisions of this part shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as follows:

(1) This paragraph applies to owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.

(2) This paragraph applies to owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.

(3) The Administrator or delegated authority, upon notification to the source, may require the owner or operator to maintain all measurements as required by paragraph (f) of this section, if the Administrator or the delegated authority determines these records are required to more accurately assess the compliance status of the affected source.

(g) If notification substantially similar to that in paragraph (a) of this section is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of paragraph (a) of this section.

(h) Individual subparts of this part may include specific provisions which clarify or make inapplicable the provisions set forth in this section.

[36 FR 24877, Dec. 28, 1971, as amended at 40 FR 46254, Oct. 6, 1975; 40 FR 58418, Dec. 16, 1975; 45 FR 5617, Jan. 23, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 52 FR 9781, Mar. 26, 1987; 55 FR 51382, Dec. 13, 1990; 59 FR 12428, Mar. 16, 1994; 59 FR 47265, Sep. 15, 1994; 64 FR 7463, Feb. 12, 1999]

§ 60.8 Performance tests.

(a) Except as specified in paragraphs (a)(1),(a)(2), (a)(3), and (a)(4) of this section, within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, or at such other times specified by this part, and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).

(1) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure, the owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.

(2) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.

(3) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.

(4) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (a)(1), (2), and (3) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.

(b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart 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, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(c) Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. 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 applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

(d) The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Administrator (or delegated State or local agency) as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator (or delegated State or local agency) by mutual agreement.

(e) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such facility. 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.

(f) Unless otherwise specified in the applicable subpart, 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 applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

(g) The performance testing shall include a test method performance audit (PA) during the performance test. The PAs consist of blind audit samples supplied by an accredited audit sample provider and analyzed during the performance test in order to provide a measure of test data bias. Gaseous audit samples are designed to audit the performance of the sampling system as well as the analytical system and must be collected by the sampling system during the compliance test just as the compliance samples are collected. If a liquid or solid audit sample is designed to audit the sampling system, it must also be collected by the sampling system during the compliance test. If multiple sampling systems or sampling trains are used during the compliance test for any of the test methods, the tester is only required to use one of the sampling systems per method to collect the audit sample. The audit sample must be analyzed by the same analyst using the same analytical reagents and analytical system and at the same time as the compliance samples. Retests are required when there is a failure to produce acceptable results for an audit sample. However, if the audit results do not affect the compliance or noncompliance status of the affected facility, the compliance authority may waive the reanalysis requirement, further audits, or retests and accept the results of the compliance test. Acceptance of the test results shall constitute a waiver of the reanalysis requirement, further audits, or retests. The compliance authority may also use the audit sample failure and the compliance test results as evidence to determine the compliance or noncompliance status of the affected facility. A blind audit sample is a sample whose value is known only to the sample provider and is not revealed to the tested facility until after they report the measured value of the audit sample. For pollutants that exist in the gas phase at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in air or nitrogen that can be introduced into the sampling system of the test method at or near the same entry point as a sample from the emission source. If no gas phase audit samples are available, an acceptable alternative is a sample of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. For samples that exist only in a liquid or solid form at ambient temperature, the audit sample shall consist of an appropriate concentration of the pollutant in the same matrix that would be produced when the sample is recovered from the sampling system as required by the test method. An accredited audit sample provider (AASP) is an organization that has been accredited to prepare audit samples by an independent, third party accrediting body.

(1) The source owner, operator, or representative of the tested facility

shall obtain an audit sample, if commercially available, from an AASP for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3C of Appendix A–3 of Part 60, Methods 6C, 7E, 9, and 10 of Appendix A–4 of Part 60, Method 18 of Appendix A–6 of Part 60, Methods 20, 22, and 25A of Appendix A–7 of Part 60, and Methods 303, 318, 320, and 321 of Appendix A of Part 63. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. The compliance authority responsible for the compliance test may waive the requirement to include an audit sample if they believe that an audit sample is not necessary. ''Commercially available'' means that two or more independent AASPs have blind audit samples available for purchase. If the source owner, operator, or representative cannot find an audit sample for a specific method, the owner, operator, or representative shall consult the EPA Web site at the following URL, *http://www.epa.gov/ttn/emc*, to confirm whether there is a source that can supply an audit sample for that method. If the EPA Web site does not list an available audit sample at least 60 days prior to the beginning of the compliance test, the source owner, operator, or representative shall not be required to include an audit sample as part of the quality assurance program for the compliance test. When ordering an audit sample, the source, operator, or representative shall give the sample provider an estimate for the concentration of each pollutant that is emitted by the source or the estimated concentration of each pollutant based on the permitted level and the name, address, and phone number of the compliance authority. The source owner, operator, or representative shall report the results for the audit sample along with a summary of the emission test results for the audited pollutant to the compliance authority and shall report the results of the audit sample to the AASP. The source owner, operator, or representative shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the AASP. If the method being audited is a method that allows the samples to be analyzed in the field and the tester plans to analyze the samples in the field, the tester may analyze the audit samples prior to collecting the emission samples provided a representative of the compliance authority is present at the testing site. The tester may request and the compliance authority may grant a waiver to the requirement that a representative of the compliance authority must be present at the testing site during the field analysis of an audit sample. The source owner, operator, or representative may report the results of the audit sample to the compliance authority and report the results of the audit sample to the AASP prior to collecting any emission samples. The test protocol and final test report shall document whether an audit sample was ordered and utilized and the pass/fail results as applicable.

(2) An AASP shall have and shall prepare, analyze, and report the true value of audit samples in accordance with a written technical criteria document that describes how audit samples will be prepared and distributed in a manner that will ensure the integrity of the audit sample program. An acceptable technical criteria document shall contain standard operating procedures for all of the following operations:

(i) Preparing the sample;

(ii) Confirming the true concentration of the sample;

(iii) Defining the acceptance limits for the results from a well qualified tester. This procedure must use well established statistical methods to analyze historical results from well qualified testers. The acceptance limits shall be set so that there is 95 percent confidence that 90 percent of well qualified labs will produce future results that are within the acceptance limit range.

(iv) Providing the opportunity for the compliance authority to comment on the selected concentration level for an audit sample;

(v) Distributing the sample to the user in a manner that guarantees that the true value of the sample is unknown to the user;

(vi) Recording the measured concentration reported by the user and determining if the measured value is within acceptable limits;

(vii) The AASP shall report the results from each audit sample in a timely manner to the compliance authority and then to the source owner, operator, or representative. The AASP shall make both reports at the same time and in the same manner or shall report to the compliance authority first and then report to the source owner, operator, or representative. The results shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, and whether the testing company passed or failed the audit. The AASP shall report the true value of the audit sample to the compliance authority. The AASP may report the true value to the source owner, operator, or representative if the AASP's operating plan ensures that no laboratory will receive the same audit sample twice.

(viii) Evaluating the acceptance limits of samples at least once every two years to determine in cooperation with the voluntary consensus standard body if they should be changed;

(ix) Maintaining a database, accessible to the compliance authorities, of results from the audit that shall include the name of the facility tested, the date on which the compliance test was conducted, the name of the company performing the sample collection, the name of the company that analyzed the compliance samples including the audit sample, the measured result for the audit sample, the true value of the audit sample, the acceptance range for the measured value, and whether the testing company passed or failed the audit.

(3) The accrediting body shall have a written technical criteria document that describes how it will ensure that the AASP is operating in accordance with the AASP technical criteria document that describes how audit samples are to be prepared and distributed. This document shall contain standard operating procedures for all of the following operations:

(i) Checking audit samples to confirm their true value as reported by the AASP;

(ii) Performing technical systems audits of the AASP's facilities and operating procedures at least once every two years;

(iii) Providing standards for use by the voluntary consensus standard body to approve the accrediting body that will accredit the audit sample providers.

(4) The technical criteria documents for the accredited sample providers and the accrediting body shall be developed through a public process guided by a voluntary consensus standards body (VCSB). The VCSB shall operate in accordance with the procedures and requirements in the Office of Management and Budget Circular A–119. A copy of Circular A–119 is available upon request by writing the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, by calling (202) 395–6880 or downloading online at *http://standards.gov/standards_gov/a119.cfm*. The VCSB shall approve all accrediting bodies. The Administrator will review all technical criteria documents. If the technical criteria documents do not meet the minimum technical requirements in paragraphs (g)(2) through (4)of this section, the technical criteria documents are not acceptable and the proposed audit sample program is not capable of producing audit samples of sufficient quality to be used in a compliance test. All acceptable technical criteria documents shall be posted on the EPA Web site at the following URL, *http://www.epa.gov/ttn/emc*.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974; 42 FR 57126, Nov. 1, 1977; 44 FR 33612, June 11, 1979; 54 FR 6662, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 64 FR 7463, Feb. 12, 1999; 72 FR 27442, May 16, 2007; 75 FR 55646, Sept. 13, 2010]

§60.9 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. (Information submitted

voluntarily to the Administrator for the purposes of §§ 60.5 and 60.6 is governed by §§ 2.201 through 2.213 of this chapter and not by § 2.301 of this chapter.)

§ 60.10 State authority.

The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from:

(a) Adopting and enforcing any emission standard or limitation applicable to an affected facility, provided that such emission standard or limitation is not less stringent than the standard applicable to such facility.

(b) Requiring the owner or operator of an affected facility to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such facility.

§ 60.11 Compliance with standards and maintenance requirements.

(a) Compliance with standards in this part, other than opacity standards, shall be determined in accordance with performance tests established by § 60.8, unless otherwise specified in the applicable standard.

(b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Method 9 in appendix A of this part, any alternative method that is approved by the Administrator, or as provided in paragraph (e)(5) of this section. For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).

(c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

(d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment 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, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(e)(1) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in § 60.8 unless one of the following conditions apply. If no performance test under § 60.8 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under § 60.8, the source owner or operator shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. In these cases, the 30-day prior notification to the Administrator required in § 60.7(a)(6) shall be waived. The rescheduled opacity observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under § 60.8. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Method 9 of appendix B of this part. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determing compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the Administrator, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission

certification. Except as provided in paragraph (e)(5) of this section, the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in appendix B of this part, has been properly maintained and (at the time of the alleged violation) that the resulting data have not been altered in any way.

(2) Except as provided in paragraph (e)(3) of this section, the owner or operator of an affected facility to which an opacity standard in this part applies shall conduct opacity observations in accordance with paragraph (b) of this section, shall record the opacity of emissions, and shall report to the Administrator the opacity results along with the results of the initial performance test required under §60.8. The inability of an owner or operator to secure a visible emissions observer shall not be considered a reason for not conducting the opacity observations concurrent with the initial performance test.

(3) The owner or operator of an affected facility to which an opacity standard in this part applies may request the Administrator to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of the affected facility shall report the opacity results. Any request to the Administrator to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in §60.7(a)(6). If, for some reason, the Administrator cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of paragraph (e)(1) of this section shall apply.

(4) An owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by §60.8 and shall furnish the Administrator a written report of the monitoring results along with Method 9 and §60.8 performance test results.

(5) An owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under §60.8 in lieu of Method 9 observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he shall notify the Administrator of that decision, in writing, at least 30 days before any performance test required under §60.8 is conducted. Once the owner or operator of an affected facility has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent tests required under §60.8 until the owner or operator notifies the Administrator, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under §60.8 using COMS data, the minimum total time of COMS data collection shall be averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under §60.8. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in §60.13(c) of this part, that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way. If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 data indicates noncompliance, the Method 9 data will be used to determine compliance with the opacity standard.

(6) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by §60.8, the opacity observation results and observer certification required by §60.11(e)(1), and the COMS results, if applicable, the Administrator

will make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by § 60.8. If the Administrator finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with § 60.8 of this part but during the time such performance tests are being conducted fails to meet any applicable opacity standard, he shall notify the owner or operator and advise him that he may petition the Administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.

(7) The Administrator will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Administrator; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(8) The Administrator will establish an opacity standard for the affected facility 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 standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity standard in the FEDERAL REGISTER.

(f) Special provisions set forth under an applicable subpart shall supersede any conflicting provisions in paragraphs (a) through (e) of this section.

(g) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[38 FR 28565, Oct. 15, 1973, as amended at 39 FR 39873, Nov. 12, 1974; 43 FR 8800, Mar. 3, 1978; 45 FR 23379, Apr. 4, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 51 FR 1790, Jan. 15, 1986; 52 FR 9781, Mar. 26, 1987; 62 FR 8328, Feb. 24, 1997; 65 FR 61749, Oct. 17, 2000]

§ 60.12 Circumvention.

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, 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 diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[39 FR 9314, Mar. 8, 1974]

§ 60.13 Monitoring requirements.

(a) For the purposes of this section, all continuous monitoring systems required under applicable subparts shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, appendix F to this part, unless otherwise specified in an applicable subpart or by the Administrator. Appendix F is applicable December 4, 1987.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under § 60.8. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device.

(c) If the owner or operator of an affected facility elects to submit continous opacity monitoring system

(COMS) data for compliance with the opacity standard as provided under §60.11(e)(5), he shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, appendix B, of this part before the performance test required under §60.8 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under §60.8 or within 30 days thereafter in accordance with the applicable performance specification in appendix B of this part, The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the Administrator under section 114 of the Act.

(1) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under §60.8 and as described in §60.11(e)(5) shall furnish the Administrator two or, upon request, more copies of a written report of the results of the COMS performance evaluation described in paragraph (c) of this section at least 10 days before the performance test required under §60.8 is conducted.

(2) Except as provided in paragraph (c)(1) of this section, the owner or operator of an affected facility shall furnish the Administrator within 60 days of completion two or, upon request, more copies of a written report of the results of the performance evaluation.

(d)(1) Owners and operators of a CEMS installed in accordance with the provisions of this part, must check the zero (or low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span must, as a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit of the applicable performance specification in appendix B of this part. The system must allow the amount of the excess zero and span drift to be recorded and quantified whenever specified. Owners and operators of a COMS installed in accordance with the provisions of this part, must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of PS–1 in appendix B of this part. For a COMS, the optical surfaces, exposed to the effluent gases, must be cleaned before performing the zero and upscale drift adjustments, except for systems using automatic zero adjustments. The optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(2) Unless otherwise approved by the Administrator, the following procedures must be followed for a COMS. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition using a certified neutral density filter or other related technique to produce a known obstruction of the light beam. Such procedures must provide a system check of all active analyzer internal optics with power or curvature, all active electronic circuitry including the light source and photodetector assembly, and electronic or electro-mechanical systems and hardware and or software used during normal measurement operation.

(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under paragraph (d) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(1) All continuous monitoring systems referenced by paragraph (c) of this section for measuring opacity of emissions 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.

(2) All continuous monitoring systems referenced by paragraph (c) of this section for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of appendix B of this part shall be used.

(g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.

(h)(1) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to 1-hour averages for time periods as defined in § 60.2. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period.

(2) For continuous monitoring systems other than opacity, 1-hour averages shall be computed as follows, except that the provisions pertaining to the validation of partial operating hours are only applicable for affected facilities that are required by the applicable subpart to include partial hours in the emission calculations:

(i) Except as provided under paragraph (h)(2)(iii) of this section, for a full operating hour (any clock hour with 60 minutes of unit operation), at least four valid data points are required to calculate the hourly average, *i.e.*, one data point in each of the 15-minute quadrants of the hour.

(ii) Except as provided under paragraph (h)(2)(iii) of this section, for a partial operating hour (any clock hour with less than 60 minutes of unit operation), at least one valid data point in each 15-minute quadrant of the hour in which the unit operates is required to calculate the hourly average.

(iii) For any operating hour in which required maintenance or quality-assurance activities are performed:

(A) If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average; or

(B) If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.

(iv) If a daily calibration error check is failed during any operating hour, all data for that hour shall be invalidated, unless a subsequent calibration error test is passed in the same hour and the requirements of paragraph (h)(2)(iii) of this section are met, based solely on valid data recorded after the successful calibration.

(v) For each full or partial operating hour, all valid data points shall be used to calculate the hourly average.

(vi) Except as provided under paragraph (h)(2)(vii) of this section, data recorded during periods of continuous monitoring system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph.

(vii) Owners and operators complying with the requirements of § 60.7(f)(1) or (2) must include any data recorded during periods of monitor breakdown or malfunction in the data averages.

(viii) When specified in an applicable subpart, hourly averages for certain partial operating hours shall not be computed or included in the emission averages (*e.g.* hours with < 30 minutes of unit operation under § 60.47b(d)).

(ix) Either arithmetic or integrated averaging of all data may be used to

calculate the hourly averages. The data may be recorded in reduced or nonreduced form (*e.g.*, ppm pollutant and percent O_2 or ng/J of pollutant).

(3) All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in the applicable subpart. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the applicable subpart to specify the emission limit.

(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:

(1) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases.

(2) Alternative monitoring requirements when the affected facility is infrequently operated.

(3) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

(4) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(5) Alternative methods of converting pollutant concentration measurements to units of the standards.

(6) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

(7) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any subpart.

(8) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Administrator may require that such demonstration be performed for each affected facility.

(9) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities is released to the atmosphere through more than one point.

(j) An alternative to the relative accuracy (RA) test specified in Performance Specification 2 of appendix B may be requested as follows:

(1) An alternative to the reference method tests for determining RA is available for sources with emission rates demonstrated to be less than 50 percent of the applicable standard. A source owner or operator may petition the Administrator to waive the RA test in Section 8.4 of Performance Specification 2 and substitute the procedures in Section 16.0 if the results of a performance test conducted according to the requirements in §60.8 of this subpart or other tests performed following the criteria in §60.8 demonstrate that the emission rate of the pollutant of interest in the units of the applicable standard is less than 50 percent of the applicable standard. For sources subject to standards expressed as control efficiency levels, a source owner or operator may petition the Administrator to waive the RA test and substitute the procedures in Section 16.0 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 continuous emission monitoring system is used to determine compliance continuously with the applicable standard. The petition to waive the RA test shall include a detailed description of the procedures to be applied. Included shall be location and procedure for conducting the alternative, the concentration or response levels of the alternative RA materials, and the other equipment checks included in the alternative procedure. The Administrator will review the petition for completeness and applicability. The determination to grant a waiver will depend

on the intended use of the CEMS data (e.g., data collection purposes other than NSPS) and may require specifications more stringent than in Performance Specification 2 (e.g., the applicable emission limit is more stringent than NSPS).

(2) The waiver of a CEMS RA test will be reviewed and may be rescinded at such time, following successful completion of the alternative RA procedure, that the CEMS data indicate that the source emissions are approaching the level. The criterion for reviewing the waiver is the collection of CEMS data showing that emissions have exceeded 70 percent of the applicable standard for seven, consecutive, averaging periods as specified by the applicable regulation(s). For sources subject to standards expressed as control efficiency levels, the criterion for reviewing the waiver is the collection of CEMS data showing that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for seven, consecutive, averaging periods as specified by the applicable regulation(s) [e.g., § 60.45(g) (2) and (3), § 60.73(e), and § 60.84(e)]. It is the responsibility of the source operator to maintain records and determine the level of emissions relative to the criterion on the waiver of RA testing. If this criterion is exceeded, the owner or operator must notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increasing emissions. The Administrator will review the notification and may rescind the waiver and require the owner or operator to conduct a RA test of the CEMS as specified in Section 8.4 of Performance Specification 2.

[40 FR 46255, Oct. 6, 1975; 40 FR 59205, Dec. 22, 1975, as amended at 41 FR 35185, Aug. 20, 1976; 48 FR 13326, Mar. 30, 1983; 48 FR 23610, May 25, 1983; 48 FR 32986, July 20, 1983; 52 FR 9782, Mar. 26, 1987; 52 FR 17555, May 11, 1987; 52 FR 21007, June 4, 1987; 64 FR 7463, Feb. 12, 1999; 65 FR 48920, Aug. 10, 2000; 65 FR 61749, Oct. 17, 2000; 66 FR 44980, Aug. 27, 2001; 71 FR 31102, June 1, 2006; 72 FR 32714, June 13, 2007]

EDITORIAL NOTE: At 65 FR 61749, Oct. 17, 2000, § 60.13 was amended by revising the words ''ng/J of pollutant'' to read ''ng of pollutant per J of heat input'' in the sixth sentence of paragraph (h). However, the amendment could not be incorporated because the words ''ng/J of pollutant'' do not exist in the sixth sentence of paragraph (h).

§ 60.14 Modification.

(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

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

(1) Emission factors as specified 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 utilization of emission factors demonstrates that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted

under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.

(d) [Reserved]

(e) 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, subject to the provisions of paragraph (c) of this section and §60.15.

(2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

(3) An increase in the hours of operation.

(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by §60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.

(5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.

(6) The relocation or change in ownership of an existing facility.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved.

(h) No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the 5 years prior to the change.

(i) Repowering projects that are awarded funding from the Department of Energy as permanent clean coal technology demonstration projects (or similar projects funded by EPA) are exempt from the requirements of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the five years prior to the change.

(j)(1) Repowering projects that qualify for an extension under section 409(b) of the Clean Air Act are exempt from the requirements of this section, provided that such change does not increase the actual hourly emissions of any pollutant regulated under this section above the actual hourly emissions achievable at that unit during the 5 years prior to the change.

(2) This exemption shall not apply to any new unit that:

(i) Is designated as a replacement for an existing unit;

(ii) Qualifies under section 409(b) of the Clean Air Act for an extension of an emission limitation compliance date under section 405 of the Clean Air Act; and

(iii) Is located at a different site than the existing unit.

(k) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration

project is exempt from the requirements of this section. A *temporary clean coal control technology demonstration project*, for the purposes of this section is a clean coal technology demonstration project that is operated for a period of 5 years or less, and which complies with the State implementation plan for the State in which the project is located and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

(l) The reactivation of a very clean coal-fired electric utility steam generating unit is exempt from the requirements of this section.

[40 FR 58419, Dec. 16, 1975, as amended at 43 FR 34347, Aug. 3, 1978; 45 FR 5617, Jan. 23, 1980; 57 FR 32339, July 21, 1992; 65 FR 61750, Oct. 17, 2000]

§ 60.15 Reconstruction.

(a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.

(b) ''Reconstruction'' means the replacement of components of an existing facility 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 entirely new facility, and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(c) ''Fixed capital cost'' means the capital needed to provide all the depreciable components.

(d) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

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

(2) The location of the existing facility.

(3) A brief description of the existing facility and the components which are to be replaced.

(4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.

(5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

(6) The estimated life of the existing facility after the replacements.

(7) A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

(e) The Administrator will determine, within 30 days of the receipt of the notice required by paragraph (d) of this section and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.

(f) The Administrator's determination under paragraph (e) shall be based on:

(1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(g) Individual subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

[40 FR 58420, Dec. 16, 1975]

§ 60.16 Priority list.

PRIORITIZED MAJOR SOURCE CATEGORIES

Priority Number[1]	Source Category
1.	Synthetic Organic Chemical Manufacturing Industry (SOCMI) and Volatile Organic Liquid Storage Vessels and Handling Equipment
	(a) SOCMI unit processes
	(b) Volatile organic liquid (VOL) storage vessels and handling equipment
	(c) SOCMI fugitive sources
	(d) SOCMI secondary sources
2.	Industrial Surface Coating: Cans
3.	Petroleum Refineries: Fugitive Sources
4.	Industrial Surface Coating: Paper
5.	Dry Cleaning
	(a) Perchloroethylene
	(b) Petroleum solvent
6.	Graphic Arts
7.	Polymers and Resins: Acrylic Resins
8.	Mineral Wool (Deleted)
9.	Stationary Internal Combustion Engines
10.	Industrial Surface Coating: Fabric
11.	Industrial-Commercial-Institutional Steam Generating Units.
12.	Incineration: Non-Municipal (Deleted)
13.	Non-Metallic Mineral Processing
14.	Metallic Mineral Processing
15.	Secondary Copper (Deleted)
16.	Phosphate Rock Preparation
17.	Foundries: Steel and Gray Iron
18.	Polymers and Resins: Polyethylene
19.	Charcoal Production
20.	Synthetic Rubber
	(a) Tire manufacture
	(b) SBR production
21.	Vegetable Oil
22.	Industrial Surface Coating: Metal Coil
23.	Petroleum Transportation and Marketing
24.	By-Product Coke Ovens
25.	Synthetic Fibers
26.	Plywood Manufacture
27.	Industrial Surface Coating: Automobiles
28.	Industrial Surface Coating: Large Appliances
29.	Crude Oil and Natural Gas Production
30.	Secondary Aluminum
31.	Potash (Deleted)
32.	Lightweight Aggregate Industry: Clay, Shale, and Slate[2]
33.	Glass
34.	Gypsum
35.	Sodium Carbonate
36.	Secondary Zinc (Deleted)
37.	Polymers and Resins: Phenolic
38.	Polymers and Resins: Urea-Melamine
39.	Ammonia (Deleted)
40.	Polymers and Resins: Polystyrene
41.	Polymers and Resins: ABS-SAN Resins
42.	Fiberglass
43.	Polymers and Resins: Polypropylene
44.	Textile Processing
45.	Asphalt Processing and Asphalt Roofing Manufacture
46.	Brick and Related Clay Products
47.	Ceramic Clay Manufacturing (Deleted)
48.	Ammonium Nitrate Fertilizer
49.	Castable Refractories (Deleted)
50.	Borax and Boric Acid (Deleted)
51.	Polymers and Resins: Polyester Resins
52.	Ammonium Sulfate
53.	Starch
54.	Perlite

PRIORITIZED MAJOR SOURCE CATEGORIES—Continued

Priority Number[1]	Source Category
55.	Phosphoric Acid: Thermal Process (Deleted)
56.	Uranium Refining
57.	Animal Feed Defluorination (Deleted)
58.	Urea (for fertilizer and polymers)
59.	Detergent (Deleted)
	Other Source Categories
	Lead acid battery manufacture[3]
	Organic solvent cleaning[3]
	Industrial surface coating: metal furniture[3]
	Stationary gas turbines[4]
	Municipal solid waste landfills[4]

[1] Low numbers have highest priority, e.g., No. 1 is high priority, No. 59 is low priority.
[2] Formerly titled "Sintering: Clay and Fly Ash".
[3] Minor source category, but included on list since an NSPS is being developed for that source category.
[4] Not prioritized, since an NSPS for this major source category has already been promulgated.

[47 FR 951, Jan. 8, 1982, as amended at 47 FR 31876, July 23, 1982; 51 FR 42796, Nov. 25, 1986; 52 FR 11428, Apr. 8, 1987; 61 FR 9919, Mar. 12, 1996]

§ 60.17 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 Library (C267–01), U.S. EPA, Research Triangle Park, NC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428–2959, Telephone (610) 832–9585, and are also available at the following

Web site: *http://www.astm.org;* or ProQuest, 789 East Eisenhower Parkway, Ann Arbor, MI 48106–1346, Telephone (734) 761–4700, and are also available at the following Web site: *http://www.proquest.com.*

(1) ASTM A99–76, 82 (Reapproved 1987), Standard Specification for Ferromanganese, incorporation by reference (IBR) approved for § 60.261.

(2) ASTM A100–69, 74, 93, Standard Specification for Ferrosilicon, IBR approved for § 60.261.

(3) ASTM A101–73, 93, Standard Specification for Ferrochromium, IBR approved for § 60.261.

(4) ASTM A482–76, 93, Standard Specification for Ferrochromesilicon, IBR approved for § 60.261.

(5) ASTM A483–64, 74 (Reapproved 1988), Standard Specification for Silicomanganese, IBR approved for § 60.261.

(6) ASTM A495–76, 94, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved for § 60.261.

(7) ASTM D86–96, Standard Test Method for Distillation of Petroleum Products (Approved April 10, 1996), IBR approved for §§ 60.562–2(d), 60.593(d), 60.593a(d), 60.633(h) and 60.5401(f).

(8) ASTM D129–64, 78, 95, 00, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for §§ 60.106(j)(2), 60.335(b)(10)(i), and appendix A: Method 19, 12.5.2.2.3.

(9) ASTM D129–00 (Reapproved 2005), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for § 60.4415(a)(1)(i).

(10) ASTM D240–76, 92, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for §§ 60.46(c), 60.296(b), and appendix A: Method 19, Section 12.5.2.2.3.

(11) ASTM D270–65, 75, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved for appendix A: Method 19, Section 12.5.2.2.1.

(12) ASTM D323–82, 94, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for §§ 60.111(l), 60.111a(g), 60.111b(g), and 60.116b(f)(2)(ii).

(13) ASTM D388–77, 90, 91, 95, 98a, 99 (Reapproved 2004)[c1], Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.24(h)(8), 60.41 of subpart D of this part, 60.45(f)(4)(i), 60.45(f)(4)(ii), 60.45(f)(4)(vi), 60.41Da of subpart Da of this part, 60.41b of subpart Db of this part, 60.41c of subpart Dc of this part, 60.251 of subpart Y of this part, and 60.4102.

(14) ASTM D396–78, 89, 90, 92, 96, 98, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b of subpart Db of this part, 60.41c of subpart Dc of this part, 60.111(b) of subpart K of this part, and 60.111a(b) of subpart Ka of this part.

(15) ASTM D975–78, 96, 98a, Standard Specification for Diesel Fuel Oils, IBR approved for §§ 60.111(b) of subpart K of this part and 60.111a(b) of subpart Ka of this part.

(16) ASTM D975–08a, Standard Specification for Diesel Fuel Oils, IBR approved for §§ 60.41b of subpart Db of this part and 60.41c of subpart Dc of this part.

(17) ASTM D1072–80, 90 (Reapproved 1994), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for § 60.335(b)(10)(ii).

(18) ASTM D1072–90 (Reapproved 1999), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for § 60.4415(a)(1)(ii).

(19) ASTM D1137–53, 75, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved for § 60.45(f)(5)(i).

(20) ASTM D1193–77, 91, Standard Specification for Reagent Water, IBR approved for appendix A: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; Method 26, Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

(21) ASTM D1266–87, 91, 98, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for §§ 60.106(j)(2) and 60.335(b)(10)(i).

(22) ASTM D1266–98 (Reapproved 2003)e1, Standard Test Method for Sulfur in Petroleum Products (Lamp

Method), IBR approved for § 60.4415(a)(1)(i).

(23) ASTM D1475–60 (Reapproved 1980), 90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for § 60.435(d)(1), appendix A: Method 24, Section 6.1; and Method 24A, Sections 6.5 and 7.1.

(24) ASTM D1552–83, 95, 01, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for §§ 60.106(j)(2), 60.335(b)(10)(i), and appendix A: Method 19, Section 12.5.2.2.3.

(25) ASTM D1552–03, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for § 60.4415(a)(1)(i).

(26) ASTM D1826–77, 94, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved for §§ 60.45(f)(5)(ii), 60.46(c)(2), 60.296(b)(3), and appendix A: Method 19, Section 12.3.2.4.

(27) ASTM D1835–87, 91, 97, 03a, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§ 60.41Da of subpart Da of this part, 60.41b of subpart Db of this part, and 60.41c of subpart Dc of this part.

(28) ASTM D1945–64, 76, 91, 96, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for § 60.45(f)(5)(i).

(29) ASTM D1946–77, 90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§ 60.18(f)(3), 60.45(f)(5)(i), 60.564(f)(1), 60.614(e)(2)(ii), 60.614(e)(4), 60.664(e)(2)(ii), 60.664(e)(4), 60.704(d)(2)(ii), and 60.704(d)(4).

(30) ASTM D2013–72, 86, Standard Method of Preparing Coal Samples for Analysis, IBR approved for appendix A: Method 19, Section 12.5.2.1.3.

(31) ASTM D2015–77 (Reapproved 1978), 96, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved for § 60.45(f)(5)(ii), 60.46(c)(2), and appendix A: Method 19, Section 12.5.2.1.3.

(32) ASTM D2016–74, 83, Standard Test Methods for Moisture Content of Wood, IBR approved for appendix A: Method 28, Section 16.1.1.

(33) ASTM D2234–76, 96, 97b, 98, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for appendix A: Method 19, Section 12.5.2.1.1.

(34) ASTM D2369–81, 87, 90, 92, 93, 95, Standard Test Method for Volatile Content of Coatings, IBR approved for appendix A: Method 24, Section 6.2.

(35) ASTM D2382–76, 88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§ 60.18(f)(3), 60.485(g)(6), 60.485a(g)(6), 60.564(f)(3), 60.614(e)(4), 60.664(e)(4), and 60.704(d)(4).

(36) ASTM D2504–67, 77, 88 (Reapproved 1993), Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for §§ 60.485(g)(5) and 60.485a(g)(5).

(37) ASTM D2584–68 (Reapproved 1985), 94, Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved for § 60.685(c)(3)(i).

(38) ASTM D2597–94 (Reapproved 1999), Standard Test Method for Analysis of Demethanized Hydrocarbon Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography, IBR approved for § 60.335(b)(9)(i).

(39) ASTM D2622–87, 94, 98, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for §§ 60.106(j)(2) and 60.335(b)(10)(i).

(40) ASTM D2622–05, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for § 60.4415(a)(1)(i).

(41) ASTM D2879–83, 96, 97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for §§ 60.111b(f)(3), 60.116b(e)(3)(ii), 60.116b(f)(2)(i), 60.485(e)(1), and 60.485a(e)(1).

(42) ASTM D2880–78, 96, Standard Specification for Gas Turbine Fuel Oils, IBR approved for §§ 60.111(b), 60.111a(b), and 60.335(d).

(43) ASTM D2908–74, 91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for § 60.564(j).

(44) ASTM D2986–71, 78, 95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved for appendix A: Method 5, Section 7.1.1; Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(45) ASTM D3173–73, 87, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for appendix A: Method 19, Section 12.5.2.1.3.

(46) ASTM D3176–74, 89, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved for § 60.45(f)(5)(i) and appendix A: Method 19, Section 12.3.2.3.

(47) ASTM D3177–75, 89, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved for appendix A: Method 19, Section 12.5.2.1.3.

(48) ASTM D3178–73 (Reapproved 1979), 89, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved for § 60.45(f)(5)(i).

(49) ASTM D3246–81, 92, 96, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for § 60.335(b)(10)(ii).

(50) ASTM D3246–05, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for § 60.4415(a)(1)(ii).

(51) ASTM D3270–73T, 80, 91, 95, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for appendix A: Method 13A, Section 16.1.

(52) ASTM D3286–85, 96, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for appendix A: Method 19, Section 12.5.2.1.3.

(53) ASTM D3370–76, 95a, Standard Practices for Sampling Water, IBR approved for § 60.564(j).

(54) ASTM D3792–79, 91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for appendix A: Method 24, Section 6.3.

(55) ASTM D4017–81, 90, 96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for appendix A: Method 24, Section 6.4.

(56) ASTM D4057–81, 95, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for appendix A: Method 19, Section 12.5.2.2.3.

(57) ASTM D4057–95 (Reapproved 2000), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for § 60.4415(a)(1).

(58) ASTM D4084–82, 94, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for § 60.334(h)(1).

(59) ASTM D4084–05, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for §§ 60.4360 and 60.4415(a)(1)(ii).

(60) ASTM D4177–95, Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for appendix A: Method 19, Section 12.5.2.2.1.

(61) ASTM D4177–95 (Reapproved 2000), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for § 60.4415(a)(1).

(62) ASTM D4239–85, 94, 97, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for appendix A: Method 19, Section 12.5.2.1.3.

(63) ASTM D4294–02, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for § 60.335(b)(10)(i).

(64) ASTM D4294–03, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for § 60.4415(a)(1)(i).

(65) ASTM D4442–84, 92, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for appendix A: Method 28, Section 16.1.1.

(66) ASTM D4444–92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, IBR approved for appendix A: Method 28, Section 16.1.1.

(67) ASTM D4457–85 (Reapproved 1991), Test Method for Determination

of Dichloromethane and 1, 1, 1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph, IBR approved for appendix A: Method 24, Section 6.5.

(68) ASTM D4468–85 (Reapproved 2000), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, IBR approved for §§ 60.335(b)(10)(ii) and 60.4415(a)(1)(ii).

(69) ASTM D4629–02, Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection, IBR approved for §§ 60.49b(e) and 60.335(b)(9)(i).

(70) ASTM D4809–95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for §§ 60.18(f)(3), 60.485(g)(6), 60.485a(g)(6), 60.564(f)(3), 60.614(d)(4), 60.664(e)(4), and 60.704(d)(4).

(71) ASTM D4810–88 (Reapproved 1999), Standard Test Method for Hydrogen Sulfide in Natural Gas Using Length of Stain Detector Tubes, IBR approved for §§ 60.4360 and 60.4415(a)(1)(ii).

(72) ASTM D5287–97 (Reapproved 2002), Standard Practice for Automatic Sampling of Gaseous Fuels, IBR approved for § 60.4415(a)(1).

(73) ASTM D5403–93, Standard Test Methods for Volatile Content of Radiation Curable Materials, IBR approved for appendix A: Method 24, Section 6.6.

(74) ASTM D5453–00, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for § 60.335(b)(10)(i).

(75) ASTM D5453–05, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for § 60.4415(a)(1)(i).

(76) ASTM D5504–01, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, IBR approved for §§ 60.334(h)(1) and 60.4360.

(77) ASTM D5762–02, Standard Test Method for Nitrogen in Petroleum and Petroleum Products by Boat-Inlet Chemiluminescence, IBR approved for § 60.335(b)(9)(i).

(78) ASTM D5865–98, Standard Test Method for Gross Calorific Value of Coal and Coke, IBR approved for § 60.45(f)(5)(ii), 60.46(c)(2), and appendix A: Method 19, Section 12.5.2.1.3.

(79) ASTM D6216–98, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, IBR approved for appendix B, Performance Specification 1.

(80) ASTM D6228–98, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for § 60.334(h)(1).

(81) ASTM D6228–98 (Reapproved 2003), Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for §§ 60.4360 and 60.4415.

(82) ASTM D6348–03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, approved October 1, 2003, IBR approved for § 60.73a(b) of subpart Ga of this part, table 7 of subpart IIII of this part, and table 2 of subpart JJJJ of this part.

(83) ASTM D6366–99, Standard Test Method for Total Trace Nitrogen and Its Derivatives in Liquid Aromatic Hydrocarbons by Oxidative Combustion and Electrochemical Detection, IBR approved for § 60.335(b)(9)(i).

(84) ASTM D6420–99 (Reapproved 2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, (Approved October 1, 2004), IBR approved for § 60.107a(d) of subpart Ja and table 2 of subpart JJJJ of this part.

(85) ASTM D6522–00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for § 60.335(a).

(86) ASTM D6522–00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers (Approved October 1, 2005), IBR approved for table 2 of subpart JJJJ of this part, and §§ 60.5413(b) and (d).

(87) ASTM D6667–01, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for § 60.335(b)(10)(ii).

(88) ASTM D6667–04, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for § 60.4415(a)(1)(ii).

(89) ASTM D6784–02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), IBR approved for appendix B to part 60, Performance Specification 12A, Section 8.6.2.

(90) ASTM D6784–02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), IBR approved for Appendix B to part 60, Performance Specification 12A, Section 8.6.2 and § 60.56c(b)(13) of subpart Ec of this part.

(91) ASTM E169–93, Standard Practices for General Techniques of Ultraviolet-Visible Quantitative Analysis (Approved May 15, 1993), IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), 60.632(f) and 60.5400(f).

(92) ASTM E260–96, Standard Practice for Packed Column Gas Chromatography (Approved April 10, 1996), IBR approved for §§ 60.485a(d), 60.593(b), 60.593a(b), 60.632(f), 60.5400(f) and 60.5406(b).

(93) ASTM D6784–02 (Reapproved 2008) Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), approved April 1, 2008, IBR approved for §§ 60.2165(j), 60.2730(j), tables 1, 5, 6 and 8 to subpart CCCC, and tables 2, 6, 7, and 9 to subpart DDDD, §§ 60.4900(b)(4)(v), 60.5220(b)(4)(v), tables 1 and 2 to subpart LLLL, and tables 2 and 3 to subpart MMMM.

(94) ASTM D5865–10 (Approved January 1, 2010), Standard Test Method for Gross Calorific Value of Coal and Coke, IBR approved for § 60.45(f)(5)(ii), § 60.46(c)(2), and appendix A–7 to part 60, Method 19, section 12.5.2.1.3.

(95) ASTM D3588–98 (Reapproved 2003), Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, (Approved May 10, 2003), IBR approved for §§ 60.107a(d) and 60.5413(d).

(96) ASTM D4891–89 (Reapproved 2006), Standard Test Method for Heating Value of Gases in Natural Gas Range by Stoichiometric Combustion, (Approved June 1, 2006), IBR approved for §§ 60.107a(d) and 60.5413(d).

(97) ASTM D1945–03 (Reapproved 2010), Standard Method for Analysis of Natural Gas by Gas Chromatography, (Approved January 1, 2010), IBR approved for §§ 60.107a(d) and 60.5413(d).

(98) ASTM D5504–08, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, (Approved June 15, 2008), IBR approved for §§ 60.107a(e) and 60.5413(d).

(99) ASTM E1584–11, Standard Test Method for Assay of Nitric Acid, approved August 1, 2011, IBR approved for § 60.73a(c) of subpart Ga of this part.

(100) ASTM D4468–85 (Reapproved 2006), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry (Approved June 1, 2006), IBR approved for § 60.107a(e).

(101) ASTM D240–02 (Reapproved 2007), Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, (Approved May 1, 2007), IBR approved for § 60.107a(d).

(102) ASTM D1826–94 (Reapproved 2003), Standard Test Method for Calorific (Heating) Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, (Approved May 10, 2003), IBR approved for § 60.107a(d).

(103) ASTM D1946–90 (Reapproved 2006), Standard Method for Analysis of Reformed Gas by Gas Chromatography, (Approved June 1, 2006), IBR approved for § 60.107a(d).

(104) ASTM D4809–06, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), (Approved December 1, 2006), IBR approved for § 60.107a(d).

(105) ASTM UOP539–97, Refinery Gas Analysis by Gas Chromatography, (Copyright 1997), IBR approved for § 60.107a(d).

(106) ASTM D3699–08, Standard Specification for Kerosine, including Appendix X1, (Approved September 1, 2008), IBR approved for §§ 60.41b of subpart Db and 60.41c of subpart Dc of this part.

(107) ASTM D6751–11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, including Appendices X1 through X3, (Approved July 15, 2011), IBR approved for §§ 60.41b of subpart Db and 60.41c of subpart Dc of this part.

(108) ASTM D7467–10, Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20), including Appendices X1 through X3, (Approved August 1, 2010), IBR approved for §§ 60.41b of subpart Db and 60.41c of subpart Dc of this part.

(b) The following material is available for purchase from the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.

(1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11–12, IBR approved January 27, 1983 for §§ 60.204(b)(3), 60.214(b)(3), 60.224(b)(3), 60.234(b)(3).

(c) The following material is available for purchase from the American Petroleum Institute, 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved January 27, 1983, for §§ 60.111(i), 60.111a(f), 60.111a(f)(1) and 60.116b(e)(2)(i).

(2) American Petroleum Institute (API) Manual of Petroleum Measurement Standards, Chapter 22-Testing Protocol, Section 2-Differential Pressure Flow Measurement Devices, First Edition, August 2005, IBR approved for § 60.107a(d) of subpart Ja of this part.

(d) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), Dunwoody Park, Atlanta, GA 30341.

(1) TAPPI Method T624 os–68, IBR approved January 27, 1983 for § 60.285(d)(3).

(e) The following material is available for purchase from the Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, DC 20037.

(1) Method 209A, Total Residue Dried at 103–105 °C, in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, IBR approved February 25, 1985 for § 60.683(b).

(f) The following material is available for purchase from the following address: Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance.

(g) The following material is available for purchase from the following address: West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, OR 97223.

(1) West Coast Lumber Standard Grading Rules No. 16, pages 5–21 and 90 and 91, September 3, 1970, revised 1984.

(h) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016–5990, Telephone (800) 843–2763, and are also available at the following Web site: *http://www.asme.org*.

(1) ASME QRO–1–1994, Standard for the Qualification and Certification of Resource Recovery Facility Operators, IBR approved for §§ 60.56a, 60.54b(a), 60.54b(b), 60.1185(a), 60.1185(c)(2), 60.1675(a), and 60.1675(c)(2).

(2) ASME PTC 4.1–1964 (Reaffirmed 1991), Power Test Codes: Test Code for Steam Generating Units (with 1968 and 1969 Addenda), IBR approved for §§ 60.46b of subpart Db of this part, 60.58a(h)(6)(ii), 60.58b(i)(6)(ii), 60.1320(a)(3) and 60.1810(a)(3).

(3) ASME Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th Edition (1971), IBR approved for §§ 60.58a(h)(6)(ii), 60.58b(i)(6)(ii), 60.1320(a)4), and 60.1810(a)(4).

(4) ANSI/ASME PTC 19.10–1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], IBR approved for § 60.56c(b)(4), § 60.63(f)(2) and (f)(4), § 60.106(e)(2), §§ 60.104a(d)(3), (d)(5), (d)(6), (h)(3), (h)(4), (h)(5), (i)(3), (i)(4), (i)(5), (j)(3), and (j)(4), § 60.105a(d)(4), (f)(2), (f)(4), (g)(2), and (g)(4), § 60.106a(a)(1)(iii), (a)(2)(iii), (a)(2)(v), (a)(2)(viii), (a)(3)(ii), and (a)(3)(v), and § 60.107a(a)(1)(ii), (a)(1)(iv), (a)(2)(ii), (c)(2), (c)(4), and (d)(2), tables 1 and 3 of subpart EEEE, tables 2 and 4 of subpart FFFF, table 2 of subpart JJJJ, §§ 60.4415(a)(2) and (a)(3), 60.2145(s)(1)(i) and (ii), 60.2145(t)(1)(ii), 60.2145(t)(5)(i), 60.2710(s)(1)(i) and (ii), 60.2710(t)(1)(ii), 60.2710(t)(5)(i), 60.2710(w)(3), 60.2730(q)(3), 60.4900(b)(4)(vii) and (viii), 60.4900(b)(5)(i), 60.5220(b)(4)(vii) and (viii), 60.5220(b)(5)(i), tables 1 and 2 to subpart LLLL, and tables 2 and 3 to subpart MMMM.

(5) ASME MFC–3M–2004, Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, IBR approved for § 60.107a(d) of subpart Ja of this part.

(6) ANSI/ASME MFC–4M–1986 (Reaffirmed 2008), Measurement of Gas Flow by Turbine Meters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(7) ANSI/ASME–MFC–5M–1985 (Reaffirmed 2006), Measurement of Liquid Flow in Closed Conduits Using Transit-Time Ultrasonic Flowmeters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(8) ASME MFC–6M–1998 (Reaffirmed 2005), Measurement of Fluid Flow in Pipes Using Vortex Flowmeters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(9) ASME/ANSI MFC–7M–1987 (Reaffirmed 2006), Measurement of Gas Flow by Means of Critical Flow Venturi Nozzles, IBR approved for § 60.107a(d) of subpart Ja of this part.

(10) ASME/ANSI MFC–9M–1988 (Reaffirmed 2006), Measurement of Liquid Flow in Closed Conduits by Weighing Method, IBR approved for § 60.107a(d) of subpart Ja of this part.

(11) ASME MFC–11M–2006, Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(12) ASME MFC–14M–2003, Measurement of Fluid Flow Using Small Bore Precision Orifice Meters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(13) ASME MFC–16–2007, Measurement of Liquid Flow in Closed Conduits with Electromagnetic Flowmeters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(14) ASME MFC–18M–2001, Measurement of Fluid Flow Using Variable Area Meters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(15) ASME MFC–22–2007, Measurement of Liquid by Turbine Flowmeters, IBR approved for § 60.107a(d) of subpart Ja of this part.

(j) ''Standard Methods for the Examination of Water and Wastewater,'' 16th edition, 1985. Method 303F: ''Determination of Mercury by the Cold Vapor Technique.'' This document may be obtained from the American Public Health Association, 1015 18th Street, NW., Washington, DC 20036, and is incorporated by reference for appendix A to part 60, Method 29, Sections 9.2.3; 10.3; and 11.1.3.

(k) This material is available for purchase from the American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675–2683. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A–91–61, Item IV–J–124), Room M–1500, 1200 Pennsylvania Ave., NW., Washington, DC.

(1) An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities. American Society for Health Care Environmental Services of the American Hospital Association. Chicago, Illinois. 1993. AHA Catalog No. 057007. ISBN 0–87258–673–5. IBR approved for § 60.35e and § 60.55c.

(l) This material is available for purchase from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161. You may inspect a copy at EPA's Air and Radiation Docket and Information

Center (Docket A–91–61, Item IV–J–125), Room M–1500, 1200 Pennsylvania Ave., NW., Washington, DC.

(1) OMB Bulletin No. 93–17: Revised Statistical Definitions for Metropolitan Areas. Office of Management and Budget, June 30, 1993. NTIS No. PB 93–192–664. IBR approved for §60.31e.

(2) [Reserved]

(m) This material is available for purchase from at least one of the following addresses: The Gas Processors Association, 6526 East 60th Street, Tulsa, OK, 74145; or Information Handling Services, 15 Inverness Way East, PO Box 1154, Englewood, CO 80150–1154. You may inspect a copy at EPA's Air and Radiation Docket and Information Center, Room B108, 1301 Constitution Ave., NW., Washington, DC 20460. You may inspect a copy at EPA's Air and Radiation Docket and Information Center, Room 3334, 1301 Constitution Ave., NW., Washington, DC 20460.

(1) Gas Processors Association Standard 2377–86, Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes, 1986 Revision, IBR approved for §§60.105(b)(1)(iv), 60.107a(b)(1)(iv), 60.334(h)(1), 60.4360, and 60.4415(a)(1)(ii).

(2) Gas Processors Association Standard 2172–09, Calculation of Gross Heating Value, Relative Density, Compressibility and Theoretical Hydrocarbon Liquid Content for Natural Gas Mixtures for Custody Transfer (2009), IBR approved for §60.107a(d) of subpart Ja of this part.

(3) Gas Processors Association Standard 2261–00, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (2000), IBR approved for §60.107a(d) of subpart Ja of this part.

(n) This material is available for purchase from IHS Inc., 15 Inverness Way East, Englewood, CO 80112.

(1) International Organization for Standards 8178–4: 1996(E), Reciprocating Internal Combustion Engines—Exhaust Emission Measurement—part 4: Test Cycles for Different Engine Applications, IBR approved for §60.4241(b).

(2) [Reserved]

(o) The following material is available from the U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, (202) 272–0167, *http://www.epa.gov*.

(1) Office of Air Quality Planning and Standards (OAQPS) Fabric Filter Bag Leak Detection Guidance, EPA–454/R–98–015, September 1997, IBR approved for §§60.2145(r)(2), 60.2710(r)(2), 60.4905(b)(3)(i)(B), and 60.5225(b)(3)(i)(B).

(2) [Reserved]

(p) The following American Gas Association material is available for purchase from the following address: ILI Infodisk, 610 Winters Avenue, Paramus, New Jersey 07652:

(1) American Gas Association Report No. 3: Orifice Metering for Natural Gas and Other Related Hydrocarbon Fluids, Part 1: General Equations and Uncertainty Guidelines (1990), IBR approved for §60.107a(d) of subpart Ja of this part.

(2) American Gas Association Report No. 3: Orifice Metering for Natural Gas and Other Related Hydrocarbon Fluids, Part 2: Specification and Installation Requirements (2000), IBR approved for §60.107a(d) of subpart Ja of this part.

(3) American Gas Association Report No. 11: Measurement of Natural Gas by Coriolis Meter (2003), IBR approved for §60.107a(d) of subpart Ja of this part.

(4) American Gas Association Transmission Measurement Committee Report No. 7: Measurement of Gas by Turbine Meters (Revised February 2006), IBR approved for §60.107a(d) of subpart Ja of this part.

(q) The following material is available for purchase from the International Standards Organization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH–1211 Geneva 20, Switzerland, +41 22 749 01 11, *http://www.iso.org/iso/home.htm*.

(1) ISO 8316: Measurement of Liquid Flow in Closed Conduits—Method by Collection of the Liquid in a Volumetric Tank (1987–10–01)—First Edition, IBR approved for §60.107a(d) of subpart Ja of this part.

(2) [Reserved]

(r) The following material is available from the North American Electric Reliability Corporation, 3353 Peachtree Road NE., Suite 600, North Tower, Atlanta, GA 30326, *http://www.nerc.com*, and is available at the following Web site: *http://www.nerc.com/files/EOP-002-3_1.pdf*.

(1) North American Electric Reliability Corporation, Reliability Standards for the Bulk of Electric Systems of North America, Reliability Standard EOP–002–3, Capacity and Energy Emergencies, updated November 19, 2012, IBR approved for §§ 60.4211(f) and 60.4243(d).

(2) [Reserved]

[48 FR 3735, Jan. 27, 1983]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 60.17, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

EDITORIAL NOTE: At 77 FR 9446, Feb. 16, 2012, § 60.17 was amended; however, the amendment could not be incorporated because paragraph (a)(94) already existed.

§ 60.18 General control device and work practice requirements.

(a) *Introduction*. (1) This section contains requirements for control devices used to comply with applicable subparts of 40 CFR parts 60 and 61. The requirements are placed here for administrative convenience and apply only to facilities covered by subparts referring to this section.

(2) This section also contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, Appendix A–7, Method 21 monitor.

(b) *Flares*. Paragraphs (c) through (f) apply to flares.

(c)(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).

(3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.

(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max}, as determined by the following equation:

$$V_{max}=(X_{H2}-K_1)*K_2$$

Where:

V_{max}=Maximum permitted velocity, m/sec.

K_1=Constant, 6.0 volume-percent hydrogen.

K_2=Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2}=The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946–77. (Incorporated by reference as specified in § 60.17).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (f)(4) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted being 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 being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (c)(4) (ii) and (iii) of this section.

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), 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

methods specified in paragraph (f)(4), less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

(5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(6).

(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(d) Owners or operators of flares 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 designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f)(1) Method 22 of appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(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:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

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;

$$K = \text{Constant, } 1.740 \times 10^{-7} \left(\frac{1}{ppm}\right) \left(\frac{g\ mole}{scm}\right) \left(\frac{MJ}{kcal}\right)$$

where the standard temperature for $\left(\frac{g\ mole}{scm}\right)$ is 20°C;

C_i=Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

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 or 88 or D4809–95 (incorporated by reference as specified in §60.17) 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 Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, V_{max}, for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$

V_{max}=Maximum permitted velocity, M/sec

28.8=Constant

31.7=Constant

H_T=The net heating value as determined in paragraph (f)(3).

(6) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation.

$V_{max} = 8.706 + 0.7084\ (H_T)$

V_{max}=Maximum permitted velocity, m/sec

8.706=Constant

0.7084=Constant

H_T=The net heating value as determined in paragraph (f)(3).

(g) *Alternative work practice for monitoring equipment for leaks.* Paragraphs (g), (h), and (i) of this section apply to

all equipment for which the applicable subpart requires monitoring with a 40 CFR part 60, Appendix A–7, Method 21 monitor, except for closed vent systems, equipment designated as leakless, and equipment identified in the applicable subpart as having no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. An owner or operator may use an optical gas imaging instrument instead of a 40 CFR part 60, Appendix A–7, Method 21 monitor. Requirements in the existing subparts that are specific to the Method 21 instrument do not apply under this section. All other requirements in the applicable subpart that are not addressed in paragraphs (g), (h), and (i) of this section apply to this standard. For example, equipment specification requirements, and non-Method 21 instrument recordkeeping and reporting requirements in the applicable subpart continue to apply. The terms defined in paragraphs (g)(1) through (5) of this section have meanings that are specific to the alternative work practice standard in paragraphs (g), (h), and (i) of this section.

(1) *Applicable subpart* means the subpart in 40 CFR parts 60, 61, 63, or 65 that requires monitoring of equipment with a 40 CFR part 60, Appendix A–7, Method 21 monitor.

(2) *Equipment* means pumps, valves, pressure relief valves, compressors, open-ended lines, flanges, connectors, and other equipment covered by the applicable subpart that require monitoring with a 40 CFR part 60, Appendix A–7, Method 21 monitor.

(3) *Imaging* means making visible emissions that may otherwise be invisible to the naked eye.

(4) *Optical gas imaging instrument* means an instrument that makes visible emissions that may otherwise be invisible to the naked eye.

(5) *Repair* means that equipment is adjusted, or otherwise altered, in order to eliminate a leak.

(6) *Leak* means:

(i) Any emissions imaged by the optical gas instrument;

(ii) Indications of liquids dripping;

(iii) Indications by a sensor that a seal or barrier fluid system has failed; or

(iv) Screening results using a 40 CFR part 60, Appendix A–7, Method 21 monitor that exceed the leak definition in the applicable subpart to which the equipment is subject.

(h) The alternative work practice standard for monitoring equipment for leaks is available to all subparts in 40 CFR parts 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR part 60, Appendix A–7, Method 21 monitor.

(1) An owner or operator of an affected source subject to CFR parts 60, 61, 63, or 65 can choose to comply with the alternative work practice requirements in paragraph (i) of this section instead of using the 40 CFR part 60, Appendix A–7, Method 21 monitor to identify leaking equipment. The owner or operator must document the equipment, process units, and facilities for which the alternative work practice will be used to identify leaks.

(2) Any leak detected when following the leak survey procedure in paragraph (i)(3) of this section must be identified for repair as required in the applicable subpart.

(3) If the alternative work practice is used to identify leaks, re-screening after an attempted repair of leaking equipment must be conducted using either the alternative work practice or the 40 CFR part 60, Appendix A–7, Method 21 monitor at the leak definition required in the applicable subpart to which the equipment is subject.

(4) The schedule for repair is as required in the applicable subpart.

(5) When this alternative work practice is used for detecting leaking equipment, choose one of the monitoring frequencies listed in Table 1 to subpart A of this part in lieu of the monitoring frequency specified for regulated equipment in the applicable subpart. Reduced monitoring frequencies for good performance are not applicable when using the alternative work practice.

(6) When this alternative work practice is used for detecting leaking equipment the following are not applicable for the equipment being monitored:

(i) Skip period leak detection and repair;

(ii) Quality improvement plans; or

(iii) Complying with standards for allowable percentage of valves and pumps to leak.

(7) When the alternative work practice is used to detect leaking equipment, the regulated equipment in paragraph (h)(1)(i) of this section must also be monitored annually using a 40 CFR part 60, Appendix A–7, Method 21 monitor at the leak definition required in the applicable subpart. The owner or operator may choose the specific monitoring period (for example, first quarter) to conduct the annual monitoring. Subsequent monitoring must be conducted every 12 months from the initial period. Owners or operators must keep records of the annual Method 21 screening results, as specified in paragraph (i)(4)(vii) of this section.

(i) An owner or operator of an affected source who chooses to use the alternative work practice must comply with the requirements of paragraphs (i)(1) through (i)(5) of this section.

(1) Instrument Specifications. The optical gas imaging instrument must comply with the requirements in (i)(1)(i) and (i)(1)(ii) of this section.

(i) Provide the operator with an image of the potential leak points for each piece of equipment at both the detection sensitivity level and within the distance used in the daily instrument check described in paragraph (i)(2) of this section. The detection sensitivity level depends upon the frequency at which leak monitoring is to be performed.

(ii) Provide a date and time stamp for video records of every monitoring event.

(2) Daily Instrument Check. On a daily basis, and prior to beginning any leak monitoring work, test the optical gas imaging instrument at the mass flow rate determined in paragraph (i)(2)(i) of this section in accordance with the procedure specified in paragraphs (i)(2)(ii) through (i)(2)(iv) of this section for each camera configuration used during monitoring (for example, different lenses used), unless an alternative method to demonstrate daily instrument checks has been approved in accordance with paragraph (i)(2)(v) of this section.

(i) Calculate the mass flow rate to be used in the daily instrument check by following the procedures in paragraphs (i)(2)(i)(A) and (i)(2)(i)(B) of this section.

(A) For a specified population of equipment to be imaged by the instrument, determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, within the distance to be used in paragraph (i)(2)(iv)(B) of this section, at or below the standard detection sensitivity level.

(B) Multiply the standard detection sensitivity level, corresponding to the selected monitoring frequency in Table 1 of subpart A of this part, by the mass fraction of detectable chemicals from the stream identified in paragraph (i)(2)(i)(A) of this section to determine the mass flow rate to be used in the daily instrument check, using the following equation.

$$E_{dic} = \left(E_{sds}\right)\sum_{i=1}^{k} x_i$$

Where:

E_{dic} = Mass flow rate for the daily instrument check, grams per hour

x_i = Mass fraction of detectable chemical(s) i seen by the optical gas imaging instrument, within the distance to be used in paragraph (i)(2)(iv)(B) of this section, at or below the standard detection sensitivity level, E_{sds}.

E_{sds} = Standard detection sensitivity level from Table 1 to subpart A, grams per hour

k = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.

(ii) Start the optical gas imaging instrument according to the manufacturer's instructions, ensuring that all appropriate settings conform to the manufacturer's instructions.

(iii) Use any gas chosen by the user that can be viewed by the optical gas imaging instrument and that has a purity of no less than 98 percent.

(iv) Establish a mass flow rate by using the following procedures:

(A) Provide a source of gas where it will be in the field of view of the optical gas imaging instrument.

(B) Set up the optical gas imaging instrument at a recorded distance from the outlet or leak orifice of the flow meter that will not be exceeded in the

actual performance of the leak survey. Do not exceed the operating parameters of the flow meter.

(C) Open the valve on the flow meter to set a flow rate that will create a mass emission rate equal to the mass rate specified in paragraph (i)(2)(i) of this section while observing the gas flow through the optical gas imaging instrument viewfinder. When an image of the gas emission is seen through the viewfinder at the required emission rate, make a record of the reading on the flow meter.

(v) Repeat the procedures specified in paragraphs (i)(2)(ii) through (i)(2)(iv) of this section for each configuration of the optical gas imaging instrument used during the leak survey.

(vi) To use an alternative method to demonstrate daily instrument checks, apply to the Administrator for approval of the alternative under § 60.13(i).

(3) Leak Survey Procedure. Operate the optical gas imaging instrument to image every regulated piece of equipment selected for this work practice in accordance with the instrument manufacturer's operating parameters. All emissions imaged by the optical gas imaging instrument are considered to be leaks and are subject to repair. All emissions visible to the naked eye are also considered to be leaks and are subject to repair.

(4) Recordkeeping. You must keep the records described in paragraphs (i)(4)(i) through (i)(4)(vii) of this section:

(i) The equipment, processes, and facilities for which the owner or operator chooses to use the alternative work practice.

(ii) The detection sensitivity level selected from Table 1 to subpart A of this part for the optical gas imaging instrument.

(iii) The analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, as specified in paragraph (i)(2)(i)(A) of this section.

(iv) The technical basis for the mass fraction of detectable chemicals used in the equation in paragraph (i)(2)(i)(B) of this section.

(v) The daily instrument check. Record the distance, per paragraph (i)(2)(iv)(B) of this section, and the flow meter reading, per paragraph (i)(2)(iv)(C) of this section, at which the leak was imaged. Keep a video record of the daily instrument check for each configuration of the optical gas imaging instrument used during the leak survey (for example, the daily instrument check must be conducted for each lens used). The video record must include a time and date stamp for each daily instrument check. The video record must be kept for 5 years.

(vi) Recordkeeping requirements in the applicable subpart. A video record must be used to document the leak survey results. The video record must include a time and date stamp for each monitoring event. A video record can be used to meet the recordkeeping requirements of the applicable subparts if each piece of regulated equipment selected for this work practice can be identified in the video record. The video record must be kept for 5 years.

(vii) The results of the annual Method 21 screening required in paragraph (h)(7) of this section. Records must be kept for all regulated equipment specified in paragraph (h)(1) of this section. Records must identify the equipment screened, the screening value measured by Method 21, the time and date of the screening, and calibration information required in the existing applicable subpart.

(5) Reporting. Submit the reports required in the applicable subpart. Submit the records of the annual Method 21 screening required in paragraph (h)(7) of this section to the Administrator via e-mail to *CCG-AWP@EPA.GOV*.

[51 FR 2701, Jan. 21, 1986, as amended at 63 FR 24444, May 4, 1998; 65 FR 61752, Oct. 17, 2000; 73 FR 78209, Dec. 22, 2008]

§ 60.19 General notification and reporting requirements.

(a) 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.

(b) 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 delivered or 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, including the use of electronic media, agreed to by the permitting authority, is acceptable.

(c) 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 (f) of this section.

(d) If an owner or operator of an affected facility 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 facility 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. The allowance in the previous sentence applies in each State beginning 1 year after the affected facility is required to be in compliance with the applicable subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(e) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under part 61, 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 periodic 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 stationary source is required to be in compliance with the applicable subpart in this part, or 1 year after the stationary source is required to be in compliance with the applicable 40 CFR part 61 or part 63 of this chapter standard, whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

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

(ii) An owner or operator shall request the adjustment provided for in paragraphs (f)(2) and (f)(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.

[59 FR 12428, Mar. 16, 1994, as amended at 64 FR 7463, Feb. 12, 1998]

TABLE 1 TO SUBPART A OF PART 60–DETECTION SENSITIVITY LEVELS (GRAMS PER HOUR)

Monitoring frequency per subpart [a]	Detection sensitivity level
Bi-Monthly	60
Semi-Quarterly	85
Monthly	100

[a] When this alternative work practice is used to identify leaking equipment, the owner or operator must choose one of the monitoring frequencies listed in this table in lieu of the monitoring frequency specified in the applicable subpart. Bi-monthly means every other month. Semi-quarterly means twice per quarter. Monthly means once per month.

[73 FR 78211, Dec. 22, 2008]

Subpart B—Adoption and Submittal of State Plans for Designated Facilities

SOURCE: 40 FR 53346, Nov. 17, 1975, unless otherwise noted.

§ 60.20 Applicability.

The provisions of this subpart apply to States upon publication of a final guideline document under § 60.22(a).

§ 60.21 Definitions.

Terms used but not defined in this subpart shall have the meaning given them in the Act and in subpart A:

(a) *Designated pollutant* means any air pollutant, the emissions of which are subject to a standard of performance for new stationary sources, but for which air quality criteria have not been issued and that is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act.

(b) *Designated facility* means any existing facility (see § 60.2(aa)) which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were an affected facility (see § 60.2(e)).

(c) *Plan* means a plan under section 111(d) of the Act which establishes emission standards for designated pollutants from designated facilities and provides for the implementation and enforcement of such emission standards.

(d) *Applicable plan* means the plan, or most recent revision thereof, which has been approved under § 60.27(b) or promulgated under § 60.27(d).

(e) *Emission guideline* means a guideline set forth in subpart C of this part, or in a final guideline document published under § 60.22(a), which reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.

(f) *Emission standard* means a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, establishing an allowance system, or prescribing equipment specifications for control of air pollution emissions.

(g) *Compliance schedule* means a legally enforceable schedule specifying a date or dates by which a source or category of sources must comply with specific emission standards contained in a plan or with any increments of progress to achieve such compliance.

(h) *Increments of progress* means steps to achieve compliance which must be taken by an owner or operator of a designated facility, including:

(1) Submittal of a final control plan for the designated facility to the appropriate air pollution control agency;

(2) Awarding of contracts for emission control systems or for process modifications, or issuance of orders for

the purchase of component parts to accomplish emission control or process modification;

(3) Initiation of on-site construction or installation of emission control equipment or process change;

(4) Completion of on-site construction or installation of emission control equipment or process change; and

(5) Final compliance.

(i) *Region* means an air quality control region designated under section 107 of the Act and described in part 81 of this chapter.

(j) *Local agency* means any local governmental agency.

[40 FR 53346, Nov. 17, 1975, as amended at 70 FR 28649, May 18, 2005; 77 FR 9447, Feb. 16, 2012]

§ 60.22 Publication of guideline documents, emission guidelines, and final compliance times.

(a) Concurrently upon or after proposal of standards of performance for the control of a designated pollutant from affected facilities, the Administrator will publish a draft guideline document containing information pertinent to control of the designated pollutant form designated facilities. Notice of the availability of the draft guideline document will be published in the FEDERAL REGISTER and public comments on its contents will be invited. After consideration of public comments and upon or after promulgation of standards of performance for control of a designated pollutant from affected facilities, a final guideline document will be published and notice of its availability will be published in the FEDERAL REGISTER.

(b) Guideline documents published under this section will provide information for the development of State plans, such as:

(1) Information concerning known or suspected endangerment of public health or welfare caused, or contributed to, by the designated pollutant.

(2) A description of systems of emission reduction which, in the judgment of the Administrator, have been adequately demonstrated.

(3) Information on the degree of emission reduction which is achievable with each system, together with information on the costs and environmental effects of applying each system to designated facilities.

(4) Incremental periods of time normally expected to be necessary for the design, installation, and startup of identified control systems.

(5) An emission guideline that reflects the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved. The Administrator will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate. (6) Such other available information as the Administrator determines may contribute to the formulation of State plans.

(c) Except as provided in paragraph (d)(1) of this section, the emission guidelines and compliance times referred to in paragraph (b)(5) of this section will be proposed for comment upon publication of the draft guideline document, and after consideration of comments will be promulgated in subpart C of this part with such modifications as may be appropriate.

(d)(1) If the Administrator determines that a designated pollutant may cause or contribute to endangerment of public welfare, but that adverse effects on public health have not been demonstrated, he will include the determination in the draft guideline document and in the FEDERAL REGISTER notice of its availability. Except as provided in paragraph (d)(2) of this section, paragraph (c) of this section shall be inapplicable in such cases.

(2) If the Administrator determines at any time on the basis of new information that a prior determination under paragraph (d)(1) of this section is incorrect or no longer correct, he will publish notice of the determination in the FEDERAL REGISTER, revise the guideline document as necessary under

paragraph (a) of this section, and propose and promulgate emission guidelines and compliance times under paragraph (c) of this section.

[40 FR 53346, Nov. 17, 1975, as amended at 54 FR 52189, Dec. 20, 1989]

§ 60.23 Adoption and submittal of State plans; public hearings.

(a)(1) Unless otherwise specified in the applicable subpart, within 9 months after notice of the availability of a final guideline document is published under § 60.22(a), each State shall adopt and submit to the Administrator, in accordance with § 60.4 of subpart A of this part, a plan for the control of the designated pollutant to which the guideline document applies.

(2) Within nine months after notice of the availability of a final revised guideline document is published as provided in § 60.22(d)(2), each State shall adopt and submit to the Administrator any plan revision necessary to meet the requirements of this subpart.

(b) If no designated facility is located within a State, the State shall submit a letter of certification to that effect to the Administrator within the time specified in paragraph (a) of this section. Such certification shall exempt the State from the requirements of this subpart for that designated pollutant.

(c)(1) Except as provided in paragraphs (c)(2) and (c)(3) of this section, the State shall, prior to the adoption of any plan or revision thereof, conduct one or more public hearings within the State on such plan or plan revision.

(2) No hearing shall be required for any change to an increment of progress in an approved compliance schedule unless the change is likely to cause the facility to be unable to comply with the final compliance date in the schedule.

(3) No hearing shall be required on an emission standard in effect prior to the effective date of this subpart if it was adopted after a public hearing and is at least as stringent as the corresponding emission guideline specified in the applicable guideline document published under § 60.22(a).

(d) Any hearing required by paragraph (c) of this section shall be held only after reasonable notice. Notice shall be given at least 30 days prior to the date of such hearing and shall include:

(1) Notification to the public by prominently advertising the date, time, and place of such hearing in each region affected;

(2) Availability, at the time of public announcement, of each proposed plan or revision thereof for public inspection in at least one location in each region to which it will apply;

(3) Notification to the Administrator;

(4) Notification to each local air pollution control agency in each region to which the plan or revision will apply; and

(5) In the case of an interstate region, notification to any other State included in the region.

(e) The State shall prepare and retain, for a minimum of 2 years, a record of each hearing for inspection by any interested party. The record shall contain, as a minimum, a list of witnesses together with the text of each presentation.

(f) The State shall submit with the plan or revision:

(1) Certification that each hearing required by paragraph (c) of this section was held in accordance with the notice required by paragraph (d) of this section; and

(2) A list of witnesses and their organizational affiliations, if any, appearing at the hearing and a brief written summary of each presentation or written submission.

(g) Upon written application by a State agency (through the appropriate Regional Office), the Administrator may approve State procedures designed to insure public participation in the matters for which hearings are required and public notification of the opportunity to participate if, in the judgment of the Administrator, the procedures, although different from the requirements of this subpart, in fact provide for adequate notice to and participation of the public. The Administrator may impose such conditions on his approval as he deems necessary. Procedures approved under this section shall be deemed to satisfy the requirements of this subpart regarding procedures for public hearings.

[40 FR 53346, Nov. 17, 1975, as amended at 60 FR 65414, Dec. 19, 1995]

§ 60.24 Emission standards and compliance schedules.

(a) Each plan shall include emission standards and compliance schedules.

(b) (1) Emission standards shall either be based on an allowance system or prescribe allowable rates of emissions except when it is clearly impracticable. Such cases will be identified in the guideline documents issued under § 60.22. Where emission standards prescribing equipment specifications are established, the plan shall, to the degree possible, set forth the emission reductions achievable by implementation of such specifications, and may permit compliance by the use of equipment determined by the State to be equivalent to that prescribed.

(2) Test methods and procedures for determining compliance with the emission standards shall be specified in the plan. Methods other than those specified in appendix A to this part may be specified in the plan if shown to be equivalent or alternative methods as defined in § 60.2 (t) and (u).

(3) Emission standards shall apply to all designated facilities within the State. A plan may contain emission standards adopted by local jurisdictions provided that the standards are enforceable by the State.

(c) Except as provided in paragraph (f) of this section, where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public health, emission standards shall be no less stringent than the corresponding emission guideline(s) specified in subpart C of this part, and final compliance shall be required as expeditiously as practicable but no later than the compliance times specified in subpart C of this part.

(d) Where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public welfare but that adverse effects on public health have not been demonstrated, States may balance the emission guidelines, compliance times, and other information provided in the applicable guideline document against other factors of public concern in establishing emission standards, compliance schedules, and variances. Appropriate consideration shall be given to the factors specified in § 60.22(b) and to information presented at the public hearing(s) conducted under § 60.23(c).

(e)(1) Any compliance schedule extending more than 12 months from the date required for submittal of the plan must include legally enforceable increments of progress to achieve compliance for each designated facility or category of facilities. Unless otherwise specified in the applicable subpart, increments of progress must include, where practicable, each increment of progress specified in § 60.21(h) and must include such additional increments of progress as may be necessary to permit close and effective supervision of progress toward final compliance.

(2) A plan may provide that compliance schedules for individual sources or categories of sources will be formulated after plan submittal. Any such schedule shall be the subject of a public hearing held according to § 60.23 and shall be submitted to the Administrator within 60 days after the date of adoption of the schedule but in no case later than the date prescribed for submittal of the first semiannual report required by § 60.25(e).

(f) Unless otherwise specified in the applicable subpart on a case-by-case basis for particular designated facilities or classes of facilities, States may provide for the application of less stringent emissions standards or longer compliance schedules than those otherwise required by paragraph (c) of this section, provided that the State demonstrates with respect to each such facility (or class of facilities):

(1) Unreasonable cost of control resulting from plant age, location, or basic process design;

(2) Physical impossibility of installing necessary control equipment; or

(3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.

(g) Nothing in this subpart shall be construed to preclude any State or political subdivision thereof from adopting or enforcing (1) emission standards more stringent than emission guidelines specified in subpart C of this part or in applicable guideline documents or

(2) compliance schedules requiring final compliance at earlier times than those specified in subpart C or in applicable guideline documents.

[40 FR 53346, Nov. 17, 1975, as amended at 60 FR 65414, Dec. 19, 1995; 65 FR 76384, Dec. 6, 2000; 70 FR 28649, May 18, 2005; 71 FR 33398, June 9, 2006; 72 FR 59204, Oct. 19, 2007; 77 FR 9447, Feb. 16, 2012]

§ 60.25 Emission inventories, source surveillance, reports.

(a) Each plan shall include an inventory of all designated facilities, including emission data for the designated pollutants and information related to emissions as specified in appendix D to this part. Such data shall be summarized in the plan, and emission rates of designated pollutants from designated facilities shall be correlated with applicable emission standards. As used in this subpart, ''correlated'' means presented in such a manner as to show the relationship between measured or estimated amounts of emissions and the amounts of such emissions allowable under applicable emission standards.

(b) Each plan shall provide for monitoring the status of compliance with applicable emission standards. Each plan shall, as a minimum, provide for:

(1) Legally enforceable procedures for requiring owners or operators of designated facilities to maintain records and periodically report to the State information on the nature and amount of emissions from such facilities, and/or such other information as may be necessary to enable the State to determine whether such facilities are in compliance with applicable portions of the plan. Submission of electronic documents shall comply with the requirements of 40 CFR part 3—(Electronic reporting).

(2) Periodic inspection and, when applicable, testing of designated facilities.

(c) Each plan shall provide that information obtained by the State under paragraph (b) of this section shall be correlated with applicable emission standards (see § 60.25(a)) and made available to the general public.

(d) The provisions referred to in paragraphs (b) and (c) of this section shall be specifically identified. Copies of such provisions shall be submitted with the plan unless:

(1) They have been approved as portions of a preceding plan submitted under this subpart or as portions of an implementation plan submitted under section 110 of the Act, and

(2) The State demonstrates:

(i) That the provisions are applicable to the designated pollutant(s) for which the plan is submitted, and

(ii) That the requirements of § 60.26 are met.

(e) The State shall submit reports on progress in plan enforcement to the Administrator on an annual (calendar year) basis, commencing with the first full report period after approval of a plan or after promulgation of a plan by the Administrator. Information required under this paragraph must be included in the annual report required by § 51.321 of this chapter.

(f) Each progress report shall include:

(1) Enforcement actions initiated against designated facilities during the reporting period, under any emission standard or compliance schedule of the plan.

(2) Identification of the achievement of any increment of progress required by the applicable plan during the reporting period.

(3) Identification of designated facilities that have ceased operation during the reporting period.

(4) Submission of emission inventory data as described in paragraph (a) of this section for designated facilities that were not in operation at the time of plan development but began operation during the reporting period.

(5) Submission of additional data as necessary to update the information submitted under paragraph (a) of this section or in previous progress reports.

(6) Submission of copies of technical reports on all performance testing on designated facilities conducted under paragraph (b)(2) of this section, complete with concurrently recorded process data.

[40 FR 53346, Nov. 17, 1975, as amended at 44 FR 65071, Nov. 9, 1979; 70 FR 59887, Oct. 13, 2005]

§ 60.26 Legal authority.

(a) Each plan shall show that the State has legal authority to carry out the plan, including authority to:

(1) Adopt emission standards and compliance schedules applicable to designated facilities.

(2) Enforce applicable laws, regulations, standards, and compliance schedules, and seek injunctive relief.

(3) Obtain information necessary to determine whether designated facilities are in compliance with applicable laws, regulations, standards, and compliance schedules, including authority to require recordkeeping and to make inspections and conduct tests of designated facilities.

(4) Require owners or operators of designated facilities to install, maintain, and use emission monitoring devices and to make periodic reports to the State on the nature and amounts of emissions from such facilities; also authority for the State to make such data available to the public as reported and as correlated with applicable emission standards.

(b) The provisions of law or regulations which the State determines provide the authorities required by this section shall be specifically identified. Copies of such laws or regulations shall be submitted with the plan unless:

(1) They have been approved as portions of a preceding plan submitted under this subpart or as portions of an implementation plan submitted under section 110 of the Act, and

(2) The State demonstrates that the laws or regulations are applicable to the designated pollutant(s) for which the plan is submitted.

(c) The plan shall show that the legal authorities specified in this section are available to the State at the time of submission of the plan. Legal authority adequate to meet the requirements of paragraphs (a)(3) and (4) of this section may be delegated to the State under section 114 of the Act.

(d) A State governmental agency other than the State air pollution control agency may be assigned responsibility for carrying out a portion of a plan if the plan demonstrates to the Administrator's satisfaction that the State governmental agency has the legal authority necessary to carry out that portion of the plan.

(e) The State may authorize a local agency to carry out a plan, or portion thereof, within the local agency's jurisdiction if the plan demonstrates to the Administrator's satisfaction that the local agency has the legal authority necessary to implement the plan or portion thereof, and that the authorization does not relieve the State of responsibility under the Act for carrying out the plan or portion thereof.

§ 60.27 Actions by the Administrator.

(a) The Administrator may, whenever he determines necessary, extend the period for submission of any plan or plan revision or portion thereof.

(b) After receipt of a plan or plan revision, the Administrator will propose the plan or revision for approval or disapproval. The Administrator will, within four months after the date required for submission of a plan or plan revision, approve or disapprove such plan or revision or each portion thereof.

(c) The Administrator will, after consideration of any State hearing record, promptly prepare and publish proposed regulations setting forth a plan, or portion thereof, for a State if:

(1) The State fails to submit a plan within the time prescribed;

(2) The State fails to submit a plan revision required by § 60.23(a)(2) within the time prescribed; or

(3) The Administrator disapproves the State plan or plan revision or any portion thereof, as unsatisfactory because the requirements of this subpart have not been met.

(d) The Administrator will, within six months after the date required for submission of a plan or plan revision, promulgate the regulations proposed under paragraph (c) of this section with such modifications as may be appropriate unless, prior to such promulgation, the State has adopted and submitted a plan or plan revision which the Administrator determines to be approvable.

(e)(1) Except as provided in paragraph (e)(2) of this section, regulations proposed and promulgated by the Administrator under this section will prescribe

emission standards of the same stringency as the corresponding emission guideline(s) specified in the final guideline document published under § 60.22(a) and will require final compliance with such standards as expeditiously as practicable but no later than the times specified in the guideline document.

(2) Upon application by the owner or operator of a designated facility to which regulations proposed and promulgated under this section will apply, the Administrator may provide for the application of less stringent emission standards or longer compliance schedules than those otherwise required by this section in accordance with the criteria specified in § 60.24(f).

(f) Prior to promulgation of a plan under paragraph (d) of this section, the Administrator will provide the opportunity for at least one public hearing in either:

(1) Each State that failed to hold a public hearing as required by § 60.23(c); or

(2) Washington, DC or an alternate location specified in the FEDERAL REGISTER.

[40 FR 53346, Nov. 17, 1975, as amended at 65 FR 76384, Dec. 6, 2000]

§ 60.28 Plan revisions by the State.

(a) Plan revisions which have the effect of delaying compliance with applicable emission standards or increments of progress or of establishing less stringent emission standards shall be submitted to the Administrator within 60 days after adoption in accordance with the procedures and requirements applicable to development and submission of the original plan.

(b) More stringent emission standards, or orders which have the effect of accelerating compliance, may be submitted to the Administrator as plan revisions in accordance with the procedures and requirements applicable to development and submission of the original plan.

(c) A revision of a plan, or any portion thereof, shall not be considered part of an applicable plan until approved by the Administrator in accordance with this subpart.

§ 60.29 Plan revisions by the 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 this subpart.

Subpart C—Emission Guidelines and Compliance Times

§ 60.30 Scope.

The following subparts contain emission guidelines and compliance times for the control of certain designated pollutants in accordance with section 111(d) and section 129 of the Clean Air Act and subpart B of this part.

(a) Subpart Ca [Reserved]

(b) Subpart Cb—Municipal Waste Combustors.

(c) Subpart Cc—Municipal Solid Waste Landfills.

(d) Subpart Cd—Sulfuric Acid Production Plants.

(e) Subpart Ce—Hospital/Medical/Infectious Waste Incinerators.

[62 FR 48379, Sept. 15, 1997]

§ 60.31 Definitions.

Terms used but not defined in this subpart have the meaning given them in the Act and in subparts A and B of this part.

[42 FR 55797, Oct. 18, 1977]

Subpart Ca [Reserved]

Subpart Cb—Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed on or Before September 20, 1994

SOURCE: 60 FR 65415, Dec. 19, 1995, unless otherwise noted.

§ 60.30b Scope and delegation of authority.

(a) This subpart contains emission guidelines and compliance schedules

for the control of certain designated pollutants from certain municipal waste combustors in accordance with section 111(d) and section 129 of the Clean Air Act and subpart B of this part. The provisions in these emission guidelines apply instead of the provisions of § 60.24(f) of subpart B of this part.

(b) The following authorities are retained by EPA:

(1) Approval of exemption claims in § 60.32b(b)(1), (d), (e), (f)(1), (i)(1);

(2) Approval of a nitrogen oxides trading program under § 60.33b(d)(2);

(3) Approval of major alternatives to test methods;

(4) Approval of major alternatives to monitoring;

(5) Waiver of recordkeeping; and

(6) Performance test and data reduction waivers under § 608(b).

[71 FR 27332, May 10, 2006]

§ 60.31b Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Air Act and subparts A, B, and Eb of this part.

EPA means the Administrator of the U.S. EPA or employee of the U.S. EPA who is delegated to perform the specified task.

Municipal waste combustor plant means one or more designated facilities (as defined in § 60.32b) at the same location.

Semi-suspension refuse-derived fuel-fired combustor/wet refuse-derived fuel process conversion means a combustion unit that was converted from a wet refuse-derived fuel process to a dry refuse-derived fuel process, and because of constraints in the design of the system, includes a low furnace height (less than 60 feet between the grate and the roof) and a high waste capacity-to-undergrate air zone ratio (greater than 300 tons of waste per day (tpd) fuel per each undergrate air zone).

Spreader stoker fixed floor refuse-derived fuel-fired combustor/100 percent coal capable means a spreader stoker type combustor with a fixed floor grate design that typically fires 100 percent refuse-derived fuel but is equipped to burn 100 percent coal instead of refuse-derived fuel to fulfill 100 percent steam or energy demand.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45119, 45125, Aug. 25, 1997; 71 FR 27332, May 10, 2006]

§ 60.32b Designated facilities.

(a) The designated facility to which these guidelines apply is each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction was commenced on or before September 20, 1994.

(b) Any municipal waste combustion unit that is capable of combusting more than 250 tons per day of municipal solid waste and is subject to a federally enforceable permit limiting the maximum amount of municipal solid waste that may be combusted in the unit to less than or equal to 11 tons per day is not subject to this subpart if the owner or operator:

(1) Notifies EPA of an exemption claim,

(2) Provides a copy of the federally enforceable permit that limits the firing of municipal solid waste to less than 11 tons per day, and

(3) Keeps records of the amount of municipal solid waste fired on a daily basis.

(c) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under this subpart are not considered in determining whether the unit is a modified or reconstructed facility under subpart Ea or subpart Eb of this part.

(d) A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to this subpart if the owner or operator of the facility notifies EPA of this exemption and provides data documenting that the facility qualifies for this exemption.

(e) A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous

waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to this subpart if the owner or operator of the facility notifies EPA of this exemption and provides data documenting that the facility qualifies for this exemption.

(f) Any unit combusting a single-item waste stream of tires is not subject to this subpart if the owner or operator of the unit:

(1) Notifies EPA of an exemption claim, and

(2) Provides data documenting that the unit qualifies for this exemption.

(g) Any unit required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(h) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this subpart.

(i) Any cofired combustor, as defined under § 60.51b of subpart Eb of this part, that meets the capacity specifications in paragraph (a) of this section is not subject to this subpart if the owner or operator of the cofired combustor:

(1) Notifies EPA of an exemption claim,

(2) Provides a copy of the federally enforceable permit (specified in the definition of cofired combustor in this section), and

(3) Keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.

(j) Air curtain incinerators, as defined under § 60.51b of subpart Eb of this part, that meet the capacity specifications in paragraph (a) of this section, and that combust a fuel stream composed of 100 percent yard waste are exempt from all provisions of this subpart except the opacity standard under § 60.37b, the testing procedures under § 60.38b, and the reporting and recordkeeping provisions under § 60.39b.

(k) Air curtain incinerators that meet the capacity specifications in paragraph (a) of this section and that combust municipal solid waste other than yard waste are subject to all provisions of this subpart.

(l) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit (as defined in § 60.51b) are not subject to this subpart if the owner or operator of the plastics/rubber recycling unit keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this subpart.

(m) Cement kilns firing municipal solid waste are not subject to this subpart.

(n) Any affected facility meeting the applicability requirements under this section is not subject to subpart E of this part.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45119, 45125, Aug. 25, 1997; 71 FR 27332, May 10, 2006]

§ 60.33b Emission guidelines for municipal waste combustor metals, acid gases, organics, and nitrogen oxides.

(a) The emission limits for municipal waste combustor metals are specified in paragraphs (a)(1) through (a)(3) of this section.

(1) For approval, a State plan shall include emission limits for particulate matter and opacity at least as protective as the emission limits for particulate matter and opacity specified in paragraphs (a)(1)(i) through (a)(1)(iii) of this section.

(i) Before April 28, 2009, the emission limit for particulate matter contained in the gases discharged to the atmosphere from a designated facility is 27 milligrams per dry standard cubic

meter, corrected to 7 percent oxygen. On and after April 28, 2009, the emission limit for particulate matter contained in the gases discharged to the atmosphere from a designated facility is 25 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) [Reserved]

(iii) The emission limit for opacity exhibited by the gases discharged to the atmosphere from a designated facility is 10 percent (6-minute average).

(2) For approval, a State plan shall include emission limits for cadmium at least as protective as the emission limits for cadmium specified in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) Before April 28, 2009, the emission limit for cadmium contained in the gases discharged to the atmosphere from a designated facility is 40 micrograms per dry standard cubic meter, corrected to 7 percent oxygen. On and after April 28, 2009, the emission limit for cadmium contained in the gases discharged to the atmosphere from a designated facility is 35 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) [Reserved]

(3) For approval, a State plan shall include emission limits for mercury at least as protective as the emission limits specified in this paragraph. Before April 28, 2009, the emission limit for mercury contained in the gases discharged to the atmosphere from a designated facility is 80 micrograms per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent. On and after April 28, 2009, the emission limit for mercury contained in the gases discharged to the atmosphere from a designated facility is 50 micrograms per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

(4) For approval, a State plan shall include an emission limit for lead at least as protective as the emission limit for lead specified in this paragraph. Before April 28, 2009, the emission limit for lead contained in the gases discharged to the atmosphere from a designated facility is 440 micrograms per dry standard cubic meter, corrected to 7 percent oxygen. On and after April 28, 2009, the emission limit for lead contained in the gases discharged to the atmosphere from a designated facility is 400 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(b) The emission limits for municipal waste combustor acid gases, expressed as sulfur dioxide and hydrogen chloride, are specified in paragraphs (b)(1) and (b)(2) of this section.

(1) For approval, a State plan shall include emission limits for sulfur dioxide at least as protective as the emission limits for sulfur dioxide specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(i) The emission limit for sulfur dioxide contained in the gases discharged to the atmosphere from a designated facility is 31 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with this emission limit is based on a 24-hour daily geometric mean.

(ii) [Reserved]

(2) For approval, a State plan shall include emission limits for hydrogen chloride at least as protective as the emission limits for hydrogen chloride specified in paragraphs (b)(2)(i) and (b)(2)(ii) of this section.

(i) The emission limit for hydrogen chloride contained in the gases discharged to the atmosphere from a designated facility is 31 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent.

(ii) [Reserved]

(3) For approval, a State plan shall be submitted by August 25, 1998 and shall include emission limits for sulfur dioxide and hydrogen chloride at least as protective as the emission limits specified in paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(i) The emission limit for sulfur dioxide contained in the gases discharged

to the atmosphere from a designated facility is 29 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with this emission limit is based on a 24-hour daily geometric mean.

(ii) The emission limit for hydrogen chloride contained in the gases discharged to the atmosphere from a designated facility is 29 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent.

(c) The emission limits for municipal waste combustor organics, expressed as total mass dioxin/furan, are specified in paragraphs (c)(1) and (c)(2) of this section.

(1) For approval, a State plan shall include an emission limit for dioxin/furan contained in the gases discharged to the atmosphere from a designated facility at least as protective as the emission limit for dioxin/furan specified in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section, as applicable.

(i) Before April 28, 2009, the emission limit for designated facilities that employ an electrostatic precipitator-based emission control system is 60 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(ii) On and after April 28, 2009, the emission limit for designated facilities that employ an electrostatic precipitator-based emission control system is 35 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(iii) The emission limit for designated facilities that do not employ an electrostatic precipitator-based emission control system is 30 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(d) For approval, a State plan shall include emission limits for nitrogen oxides at least as protective as the emission limits listed in table 1 of this subpart for designated facilities. table 1 provides emission limits for the nitrogen oxides concentration level for each type of designated facility.

(1) A State plan may allow nitrogen oxides emissions averaging as specified in paragraphs (d)(1)(i) through (d)(1)(v) of this section.

(i) The owner or operator of a municipal waste combustor plant may elect to implement a nitrogen oxides emissions averaging plan for the designated facilities that are located at that plant and that are subject to subpart Cb, except as specified in paragraphs (d)(1)(i)(A) and (d)(1)(i)(B) of this section.

(A) Municipal waste combustor units subject to subpart Ea or Eb cannot be included in the emissions averaging plan.

(B) Mass burn refractory municipal waste combustor units and other municipal waste combustor technologies not listed in paragraph (d)(1)(iii) of this section may not be included in the emissions averaging plan.

(ii) The designated facilities included in the nitrogen oxides emissions averaging plan must be identified in the initial compliance report specified in § 60.59b(f) or in the annual report specified in § 60.59b(g), as applicable, prior to implementing the averaging plan. The designated facilities being included in the averaging plan may be redesignated each calendar year. Partial year redesignation is allowable with State approval.

(iii) To implement the emissions averaging plan, the average daily (24-hour) nitrogen oxides emission concentration level for gases discharged from the designated facilities being included in the emissions averaging plan must be no greater than the levels specified in table 2 of this subpart. table 2 provides emission limits for the nitrogen oxides concentration level for each type of designated facility.

(iv) Under the emissions averaging plan, the average daily nitrogen oxides emissions specified in paragraph (d)(1)(iii) of this section shall be calculated using equation (1). Designated facilities that are offline shall not be included in calculating the average daily nitrogen oxides emission level.

$$NO_{X_{24-hr}} = \frac{\sum_{i=1}^{h}\left(NO_{X_i}\right)\left(S_i\right)}{\sum_{i=1}^{h}\left(S_i\right)} \quad (1)$$

where:

$NO_{X\,24\text{-}hr}$=24-hr daily average nitrogen oxides emission concentration level for the emissions averaging plan (parts per million by volume corrected to 7 percent oxygen).

$NO_{X\,i\text{-}hr}$=24-hr daily average nitrogen oxides emission concentration level for designated facility i (parts per million by volume, corrected to 7 percent oxygen), calculated according to the procedures in § 60.58b(h) of this subpart.

S_i=maximum demonstrated municipal waste combustor unit load for designated facility i (pounds per hour steam or feedwater flow as determined in the most recent dioxin/furan performance test).

h=total number of designated facilities being included in the daily emissions average.

(v) For any day in which any designated facility included in the emissions averaging plan is offline, the owner or operator of the municipal waste combustor plant must demonstrate compliance according to either paragraph (d)(1)(v)(A) of this section or both paragraphs (d)(1)(v)(B) and (d)(1)(v)(C) of this section.

(A) Compliance with the applicable limits specified in table 2 of this subpart shall be demonstrated using the averaging procedure specified in paragraph (d)(1)(iv) of this section for the designated facilities that are online.

(B) For each of the designated facilities included in the emissions averaging plan, the nitrogen oxides emissions on a daily average basis shall be calculated and shall be equal to or less than the maximum daily nitrogen oxides emission level achieved by that designated facility on any of the days during which the emissions averaging plan was achieved with all designated facilities online during the most recent calendar quarter. The requirements of this paragraph do not apply during the first quarter of operation under the emissions averaging plan.

(C) The average nitrogen oxides emissions (kilograms per day) calculated according to paragraph (d)(1)(v)(C)(*2*) of this section shall not exceed the average nitrogen oxides emissions (kilograms per day) calculated according to paragraph (d)(1)(v)(C)(*1*) of this section.

(*1*) For all days during which the emissions averaging plan was implemented and achieved and during which all designated facilities were online, the average nitrogen oxides emissions shall be calculated. The average nitrogen oxides emissions (kilograms per day) shall be calculated on a calendar year basis according to paragraphs (d)(1)(v)(C)(*1*)(*i*) through (d)(1)(v)(C)(*1*)(*iii*) of this section.

(*i*) For each designated facility included in the emissions averaging plan, the daily amount of nitrogen oxides emitted (kilograms per day) shall be calculated based on the hourly nitrogen oxides data required under § 60.38b(a) and specified under § 60.58b(h)(5) of subpart Eb of this part, the flue gas flow rate determined using table 19–1 of EPA Reference Method 19 or a State-approved method, and the hourly average steam or feedwater flow rate.

(*ii*) The daily total nitrogen oxides emissions shall be calculated as the sum of the daily nitrogen oxides emissions from each designated facility calculated under paragraph (d)(1)(v)(C)(*1*)(*i*) of this section.

(*iii*) The average nitrogen oxides emissions (kilograms per day) on a calendar year basis shall be calculated as the sum of all daily total nitrogen oxides emissions calculated under paragraph (d)(1)(v)(C)(*1*)(*ii*) of this section divided by the number of calendar days for which a daily total was calculated.

(*2*) For all days during which one or more of the designated facilities under the emissions averaging plan was offline, the average nitrogen oxides emissions shall be calculated. The average nitrogen oxides emissions (kilograms per day) shall be calculated on a calendar year basis according to paragraphs (d)(1)(v)(C)(*2*)(*i*) through (d)(1)(v)(C)(*2*)(*iii*) of this section.

(*i*) For each designated facility included in the emissions averaging plan, the daily amount of nitrogen oxides emitted (kilograms per day) shall be calculated based on the hourly nitrogen oxides data required under § 60.38b(a) and specified under § 60.58b(h)(5) of subpart Eb of this part,

the flue gas flow rate determined using table 19–1 of EPA Reference Method 19 or a State-approved method, and the hourly average steam or feedwater flow rate.

(*ii*) The daily total nitrogen oxides emissions shall be calculated as the sum of the daily nitrogen oxides emissions from each designated facility calculated under paragraph (d)(1)(v)(C)(*2*)(*i*) of this section.

(*iii*) The average nitrogen oxides emissions (kilograms per day) on a calendar year basis shall be calculated as the sum of all daily total nitrogen oxides emissions calculated under paragraph (d)(1)(v)(C)(*2*)(*ii*) of this section divided by the number of calendar days for which a daily total was calculated.

(2) A State plan may establish a program to allow owners or operators of municipal waste combustor plants to engage in trading of nitrogen oxides emission credits. A trading program must be approved by EPA before implementation.

(3) For approval, a State plan shall include emission limits for nitrogen oxides from fluidized bed combustors at least as protective as the emission limits listed in paragraphs (d)(3)(i) and (d)(3)(ii) of this section.

(i) The emission limit for nitrogen oxides contained in the gases discharged to the atmosphere from a designated facility that is a fluidized bed combustor is 180 parts per million by volume, corrected to 7 percent oxygen.

(ii) If a State plan allows nitrogen oxides emissions averaging as specified in paragraphs (d)(1)(i) through (d)(1)(v) of this section, the emission limit for nitrogen oxides contained in the gases discharged to the atmosphere from a designated facility that is a fluidized bed combustor is 165 parts per million by volume, corrected to 7 percent oxygen.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45119, 45125, Aug. 25, 1997; 71 FR 27333, May 10, 2006]

§ 60.34b Emission guidelines for municipal waste combustor operating practices.

(a) For approval, a State plan shall include emission limits for carbon monoxide at least as protective as the emission limits for carbon monoxide listed in table 3 of this subpart. table 3 provides emission limits for the carbon monoxide concentration level for each type of designated facility.

(b) For approval, a State plan shall include requirements for municipal waste combustor operating practices at least as protective as those requirements listed in § 60.53b(b) and (c) of subpart Eb of this part.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, 45125, Aug. 25, 1997; 69 FR 42121, July 14, 2004; 71 FR 27333, May 10, 2006]

§ 60.35b Emission guidelines for municipal waste combustor operator training and certification.

For approval, a State plan shall include requirements for designated facilities for municipal waste combustor operator training and certification at least as protective as those requirements listed in § 60.54b of subpart Eb of this part. The State plan shall require compliance with these requirements according to the schedule specified in § 60.39b(c)(4).

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, Aug. 25, 1997]

§ 60.36b Emission guidelines for municipal waste combustor fugitive ash emissions.

For approval, a State plan shall include requirements for municipal waste combustor fugitive ash emissions at least as protective as those requirements listed in § 60.55b of subpart Eb of this part.

§ 60.37b Emission guidelines for air curtain incinerators.

For approval, a State plan shall include emission limits for opacity for air curtain incinerators at least as protective as those listed in § 60.56b of subpart Eb of this part.

§ 60.38b Compliance and performance testing.

(a) For approval, a State plan shall include the performance testing methods listed in § 60.58b of subpart Eb of this part, as applicable, except as provided for under § 60.24(b)(2) of subpart B of this part and paragraphs (b) and (c) of this section.

(b) For approval, a State plan shall include for designated facilities the alternative performance testing schedule for dioxins/furans specified in § 60.58b(g)(5)(iii) of subpart Eb of this part, as applicable, for those designated facilities that achieve a dioxin/furan emission level less than or equal to 15 nanograms per dry standard cubic meter total mass, corrected to 7 percent oxygen.

(c) [Reserved]

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, Aug. 25, 1997]

§ 60.39b Reporting and recordkeeping guidelines and compliance schedules.

(a) For approval, a State plan shall include the reporting and recordkeeping provisions listed in § 60.59b of subpart Eb of this part, as applicable, except for the siting requirements under § 60.59b(a), (b)(5), and (d)(11) of subpart Eb of this part.

(b) Except as provided in paragraph (e) of this section, not later than December 19, 1996, each State in which a designated facility is located shall submit to EPA a plan to implement and enforce all provisions of this subpart except the revised April 28, 2009 emission limits in § 60.33b(a), (c), and (d). Not later than April 28, 2007, each State in which a designated facility is located shall submit to EPA a plan to implement and enforce all provisions of this subpart, as amended on May 10, 2006. The submittal schedule specified in this paragraph is in accordance with section 129(b)(2) of the Clean Air Act and applies instead of the schedule provided in § 60.23(a)(1) of subpart B of this part.

(c) For approval, a State plan that is submitted prior to May 10, 2006 shall include the compliance schedules specified in paragraphs (c)(1) through (c)(5) of this section.

(1) A State plan shall allow designated facilities to comply with all requirements of a State plan (or close) within 1 year after approval of the State plan, except as provided by paragraph (c)(1)(i) and (c)(1)(ii) of this section.

(i) A State plan that allows designated facilities more than 1 year but less than 3 years following the date of issuance of a revised construction or operation permit, if a permit modification is required, or more than 1 year but less than 3 years following approval of the State plan, if a permit modification is not required, shall include measurable and enforceable incremental steps of progress toward compliance. Suggested measurable and enforceable activities are specified in paragraphs (c)(1)(i)(A) through (c)(1)(i)(J) of this section.

(A) Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);

(B) Date for obtaining design drawings of the air pollution control device(s);

(C) Date for submittal of permit modifications, if necessary;

(D) Date for submittal of the final control plan to the Administrator. [§ 60.21 (h)(1) of subpart B of this part.];

(E) Date for ordering the air pollution control device(s);

(F) Date for obtaining the major components of the air pollution control device(s);

(G) Date for initiation of site preparation for installation of the air pollution control device(s);

(H) Date for initiation of installation of the air pollution control device(s);

(I) Date for initial startup of the air pollution control device(s); and

(J) Date for initial performance test(s) of the air pollution control device(s).

(ii) A State plan that allows designated facilities more than 1 year but up to 3 years after State plan approval to close shall require a closure agreement. The closure agreement must include the date of plant closure.

(2) If the State plan requirements for a designated facility include a compliance schedule longer than 1 year after approval of the State plan in accordance with paragraph (c)(1)(i) or (c)(1)(ii) of this section, the State plan submittal (for approval) shall include performance test results for dioxin/furan emissions for each designated facility that has a compliance schedule longer than 1 year following the approval of the State plan, and the performance test results shall have been conducted during or after 1990. The performance

test shall be conducted according to the procedures in § 60.38b.

(3) [Reserved]

(4) A State plan shall require compliance with the municipal waste combustor operator training and certification requirements under § 60.35b according to the schedule specified in paragraphs (c)(4)(i) through (c)(4)(iii) of this section.

(i) [Reserved]

(ii) For designated facilities, the State plan shall require compliance with the municipal waste combustor operator training and certification requirements specified under § 60.54b (a) through (c) of subpart Eb of this part by the date 6 months after the date of startup or 12 months after State plan approval, whichever is later.

(iii) For designated facilities, the State plan shall require compliance with the requirements specified in § 60.54b (d), (f), and (g) of subpart Eb of this part no later than 6 months after startup or 12 months after State plan approval, whichever is later.

(A) The requirement specified in § 60.54b(d) of subpart Eb of this part does not apply to chief facility operators, shift supervisors, and control room operators who have obtained full certification from the American Society of Mechanical Engineers on or before the date of State plan approval.

(B) The owner or operator of a designated facility may request that the Administrator waive the requirement specified in § 60.54b(d) of subpart Eb of this part for chief facility operators, shift supervisors, and control room operators who have obtained provisional certification from the American Society of Mechanical Engineers on or before the initial date of State plan approval.

(C) The initial training requirements specified in § 60.54b(f)(1) of subpart Eb of this part shall be completed no later than the date specified in paragraph (c)(4)(iii)(C)(*1*), (c)(4)(iii)(C)(*2*), or (c)(4)(iii)(C)(*3*), of this section whichever is later.

(*1*) The date 6 months after the date of startup of the affected facility;

(*2*) Twelve months after State plan approval; or

(*3*) The date prior to the day when the person assumes responsibilities affecting municipal waste combustor unit operation.

(5) A State plan shall require all designated facilities for which construction, modification, or reconstruction is commenced after June 26, 1987 to comply with the emission limit for mercury specified in § 60.33b(a)(3) and the emission limit for dioxins/furans specified in § 60.33b(c)(1) within 1 year following issuance of a revised construction or operation permit, if a permit modification is required, or within 1 year following approval of the State plan, whichever is later.

(d) In the event no plan for implementing the emission guidelines is approved by EPA, all designated facilities meeting the applicability requirements under § 60.32b shall be in compliance with all of the guidelines, except those specified under § 60.33b (a)(4), (b)(3), and (d)(3), no later than December 19, 2000.

(e) Not later than August 25, 1998, each State in which a designated facility is operating shall submit to EPA a plan to implement and enforce all provisions of this subpart specified in § 60.33b(b)(3) and (d)(3) and the emission limit in paragraph (a)(4) that applies before April 28, 2009.

(f) In the event no plan for implementing the emission guidelines is approved by EPA, all designated facilities meeting the applicability requirements under § 60.32b shall be in compliance with all of the guidelines, including those specified under § 60.33b (a)(4), (b)(3), and (d)(3), no later than August 26, 2002.

(g) For approval, a revised State plan submitted not later than April 28, 2007 in accordance with paragraph (b) of this section, shall include compliance schedules for meeting the revised April 28, 2009 emission limits in § 60.33b(a), (c), and (d) and the revised testing provisions in § 60.38b(b).

(1) Compliance with the revised April 28, 2009 emission limits is required as expeditiously as practicable, but no later than April 28, 2009, except as provided in paragraph (g)(2) of this section.

(2) The owner or operator of an affected facility who is planning an extensive emission control system upgrade may petition the Administrator for a longer compliance schedule and

must demonstrate to the satisfaction of the Administrator the need for the additional time. If approved, the schedule may exceed the schedule in paragraph (g)(1) of this section, but cannot exceed May 10, 2011.

(h) In the event no plan for implementing the emission guidelines is approved by EPA, all designated facilities meeting the applicability requirements under §60.32b shall be in compliance with all of the guidelines, including the revised April 28, 2009 emission limits in §60.33b(a), (b), (c), (d), and §60.34b(a), and the revised testing provisions in §60.38b(b), no later than May 10, 2011.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, 45125, Aug. 25, 1997; 71 FR 27333, May 10, 2006]

TABLE 1 TO SUBPART Cb OF PART 60—NITROGEN OXIDES GUIDELINES FOR DESIGNATED FACILITIES

Municipal waste combustor technology	Before April 28, 2009, nitrogen oxides emission limit (parts per million by volume) [a]	On and after April 28, 2009, nitrogen oxides emission limit (parts per million by volume) [a]
Mass burn waterwall	205	205.
Mass burn rotary waterwall	250	210.
Refuse-derived fuel combustor	250	250.
Fluidized bed combustor	180	180.
Mass burn refractory combustors	No limit	No limit.

[a] Corrected to 7 percent oxygen, dry basis.

[71 FR 27334, May 10, 2006]

TABLE 2 TO SUBPART Cb OF PART 60—NITROGEN OXIDES LIMITS FOR EXISTING DESIGNATED FACILITIES INCLUDED IN AN EMISSIONS AVERAGING PLAN AT A MUNICIPAL WASTE COMBUSTOR PLANT [b]

Municipal waste combustor technology	Before April 28, 2009, nitrogen oxides emission limit (parts per million by volume) [b]	On and after April 28, 2009, nitrogen oxides emission limit (parts per million by volume) [a]
Mass burn waterwall	185	185
Mass burn rotary waterwall	220	190
Refuse-derived fuel combustor	230	230
Fluidized bed combustor	165	165

[a] Mass burn refractory municipal waste combustors and other MWC technologies not listed above may not be included in an emissions averaging plan.
[b] Corrected to 7 percent oxygen, dry basis.

[71 FR 27334, May 10, 2006]

TABLE 3 TO SUBPART Cb OF PART 60—MUNICIPAL WASTE COMBUSTOR OPERATING GUIDELINES

Municipal waste combustor technology	Carbon monoxide emissions levels (parts per million by volume) [a]	Averaging time (hrs) [b]
Mass burn waterwall	100	4
Mass burn refractory	100	4
Mass burn rotary refractory	100	24
Mass burn rotary waterwall	250	24
Modular starved air	50	4
Modular excess air	50	4
Refuse-derived fuel stoker	200	24
Fluidized bed, mixed fuel (wood/refuse-derived fuel)	200	[c] 24
Bubbling fluidized bed combustor	100	4
Circulating fluidized bed combustor	100	4
Pulverized coal/refuse-derived fuel mixed fuel-fired combustor	150	4
Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor	200	24
Semi-suspension refuse-derived fuel-fired combustor/wet refuse-derived fuel process conversion	250	[c] 24

Municipal waste combustor technology	Carbon monoxide emissions levels (parts per million by volume) [a]	Averaging time (hrs) [b]
Spreader stoker fixed floor refuse-derived fuel-fired combustor/100 percent coal capable	250	[c] 24

[a] Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen, dry basis. Calculated as an arithmetic average.
[b] Averaging times are 4-hour or 24-hour block averages.
[c] 24-hour block average, geometric mean.

[71 FR 27334, May 10, 2006]

Subpart Cc—Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

SOURCE: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

§ 60.30c Scope.

This subpart contains emission guidelines and compliance times for the control of certain designated pollutants from certain designated municipal solid waste landfills in accordance with section 111(d) of the Act and subpart B.

§ 60.31c Definitions.

Terms used but not defined in this subpart have the meaning given them in the Act and in subparts A, B, and WWW of this part.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill or a lateral expansion.

§ 60.32c Designated facilities.

(a) The designated facility to which the guidelines apply is each existing MSW landfill for which construction, reconstruction or modification was commenced before May 30, 1991.

(b) Physical or operational changes made to an existing MSW landfill solely to comply with an emission guideline are not considered a modification or reconstruction and would not subject an existing MSW landfill to the requirements of subpart WWW [see § 60.750 of subpart WWW].

(c) For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters on the effective date of EPA approval of the State's program under section 111(d) of the Act, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §§ 70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter 90 days after the effective date of such 111(d) program approval, even if the design capacity report is submitted earlier.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met.

(1) The landfill was never subject to the requirement for a control system under § 60.33c(c) of this subpart; or

(2) The owner or operator meets the conditions for control system removal specified in §60.752(b)(2)(v) of subpart WWW.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§60.33c Emission guidelines for municipal solid waste landfill emissions.

(a) For approval, a State plan shall include control of MSW landfill emissions at each MSW landfill meeting the following three conditions:

(1) The landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition;

(2) The landfill has a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the design capacity report; and

(3) The landfill has a nonmethane organic compound emission rate of 50 megagrams per year or more.

(b) For approval, a State plan shall include the installation of a collection and control system meeting the conditions provided in §60.752(b)(2)(ii) of this part at each MSW landfill meeting the conditions in paragraph (a) of this section. The State plan shall include a process for State review and approval of the site-specific design plans for the gas collection and control system(s).

(c) For approval, a State plan shall include provisions for the control of collected MSW landfill emissions through the use of control devices meeting the requirements of paragraph (c)(1), (2), or (3) of this section, except as provided in §60.24.

(1) An open flare designed and operated in accordance with the parameters established in §60.18; or

(2) A control system designed and operated to reduce NMOC by 98 weight percent; or

(3) An enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, dry basis at 3 percent oxygen, or less.

(d) For approval, a State plan shall require each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume to submit an initial design capacity report to the Administrator as provided in §60.757(a)(2) of subpart WWW by the date specified in §60.35c of this subpart. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided in paragraph (d)(1) and (d)(2) of this section.

(1) The owner or operator shall submit an amended design capacity report as provided in §60.757(a)(3) of subpart WWW. [Guidance: Note that if the design capacity increase is the result of a modification, as defined in §60.751 of subpart WWW, that was commenced on or after May 30, 1991, the landfill will become subject to subpart WWW instead of this subpart. If the design capacity increase is the result of a change in operating practices, density, or some other change that is not a modification, the landfill remains subject to this subpart.]

(2) When an increase in the maximum design capacity of a landfill with an initial design capacity less than 2.5 million megagrams or 2.5 million cubic meters results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with paragraph (e) of this section.

(e) For approval, a State plan shall require each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters to either install a collection and control system as provided in paragraph (b) of this section and §60.752(b)(2) of subpart WWW or calculate an initial NMOC emission rate for the landfill using the procedures specified in §60.34c of this subpart and §60.754 of subpart WWW. The NMOC

emission rate shall be recalculated annually, except as provided in § 60.757(b)(1)(ii) of subpart WWW.

(1) If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:

(i) Submit an annual emission report, except as provided for in § 60.757(b)(1)(ii); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in § 60.754(a)(1) of subpart WWW until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.

(2)(i) If the NMOC emission rate, upon initial calculation or annual recalculation required in paragraph (e)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system as provided in paragraph (b) of this section and § 60.752(b)(2) of subpart WWW.

(ii) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided in § 60.35c of this subpart and § 60.757(d) of subpart WWW.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9261, Feb. 24, 1999]

§ 60.34c Test methods and procedures.

For approval, a State plan shall include provisions for: the calculation of the landfill NMOC emission rate listed in § 60.754, as applicable, to determine whether the landfill meets the condition in § 60.33c(a)(3); the operational standards in § 60.753; the compliance provisions in § 60.755; and the monitoring provisions in § 60.756.

§ 60.35c Reporting and recordkeeping guidelines.

For approval, a State plan shall include the recordkeeping and reporting provisions listed in §§ 60.757 and 60.758, as applicable, except as provided under § 60.24.

(a) For existing MSW landfills subject to this subpart the initial design capacity report shall be submitted no later than 90 days after the effective date of EPA approval of the State's plan under section 111(d) of the Act.

(b) For existing MSW landfills covered by this subpart with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the initial NMOC emission rate report shall be submitted no later than 90 days after the effective date of EPA approval of the State's plan under section 111(d) of the Act.

[61 FR 9919, Mar. 12, 1996, as amended at 64 FR 9262, Feb. 24, 1999]

§ 60.36c Compliance times.

(a) Except as provided for under paragraph (b) of this section, planning, awarding of contracts, and installation of MSW landfill air emission collection and control equipment capable of meeting the emission guidelines established under § 60.33c shall be accomplished within 30 months after the date the initial NMOC emission rate report shows NMOC emissions equal or exceed 50 megagrams per year.

(b) For each existing MSW landfill meeting the conditions in § 60.33c(a)(1) and § 60.33c(a)(2) whose NMOC emission rate is less than 50 megagrams per year on the effective date of the State emission standard, installation of collection and control systems capable of meeting emission guidelines in § 60.33c shall be accomplished within 30 months of the date when the condition in § 60.33c(a)(3) is met (i.e., the date of the first annual nonmethane organic compounds emission rate which equals or exceeds 50 megagrams per year).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

Subpart Cd—Emissions Guidelines and Compliance Times for Sulfuric Acid Production Units

SOURCE: 60 FR 65414, Dec. 19, 1995, unless otherwise noted.

§ 60.30d Designated facilities.

Sulfuric acid production units. The designated facility to which §§ 60.31d and 60.32d apply is each existing ''sulfuric acid production unit'' as defined in § 60.81(a) of subpart H of this part.

§60.31d Emissions guidelines.

Sulfuric acid production units. The emission guideline for designated facilities is 0.25 grams sulfuric acid mist (as measured by EPA Reference Method 8 of appendix A of this part) per kilogram (0.5 pounds per ton) of sulfuric acid produced, the production being expressed as 100 percent sulfuric acid.

§60.32d Compliance times.

Sulfuric acid production units. Planning, awarding of contracts, and installation of equipment capable of attaining the level of the emission guideline established under §60.31d can be accomplished within 17 months after the effective date of a State emission standard for sulfuric acid mist.

Subpart Ce—Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators

SOURCE: 62 FR 48379, Sept. 15, 1997, unless otherwise noted.

§60.30e Scope.

This subpart contains emission guidelines and compliance times for the control of certain designated pollutants from hospital/medical/infectious waste incinerator(s) (HMIWI) in accordance with sections 111 and 129 of the Clean Air Act and subpart B of this part. The provisions in these emission guidelines supersede the provisions of §60.24(f) of subpart B of this part.

§60.31e Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Air Act and in subparts A, B, and Ec of this part.

Standard Metropolitan Statistical Area or *SMSA* means any areas listed in OMB Bulletin No. 93–17 entitled ''Revised Statistical Definitions for Metropolitan Areas'' dated June 30, 1993 (incorporated by reference, see §60.17).

§60.32e Designated facilities.

(a) Except as provided in paragraphs (b) through (h) of this section, the designated facility to which the guidelines apply is each individual HMIWI:

(1) For which construction was commenced on or before June 20, 1996, or for which modification was commenced on or before March 16, 1998.

(2) For which construction was commenced after June 20, 1996 but no later than December 1, 2008, or for which modification is commenced after March 16, 1998 but no later than April 6, 2010.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in §60.51c) is burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned.

(c) Any co-fired combustor (defined in §60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(d) Any combustor required to have a permit under Section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under subpart Cb, Ea, or Eb of this part (standards or guidelines for certain municipal waste combustors) is not subject to this subpart.

(f) Any pyrolysis unit (defined in §60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI unit solely for the purpose of complying with emission guidelines under this subpart

are not considered a modification and do not result in an existing HMIWI unit becoming subject to the provisions of subpart Ec (see § 60.50c).

(i) Beginning September 15, 2000, or on the effective date of an EPA approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, designated facilities subject to this subpart shall operate pursuant to a permit issued under the EPA-approved operating permit program.

(j) The requirements of this subpart as promulgated on September 15, 1997, shall apply to the designated facilities defined in paragraph (a)(1) of this section until the applicable compliance date of the requirements of this subpart, as amended on October 6, 2009. Upon the compliance date of the requirements of this subpart, designated facilities as defined in paragraph (a)(1) of this section are no longer subject to the requirements of this subpart, as promulgated on September 15, 1997, but are subject to the requirements of this subpart, as amended on October 6, 2009.

(k) The authorities listed under § 60.50c(i) shall be retained by the Administrator and not be transferred to a state.

[60 FR 65414, Dec. 19, 1995, as amended at 74 FR 51402, Oct. 6, 2009; 76 FR 18412, Apr. 4, 2011]

§ 60.33e Emissions guidelines.

(a) For approval, a State plan shall include the requirements for emissions limits at least as protective as the following requirements, as applicable:

(1) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions guidelines as promulgated on September 15, 1997, the requirements listed in Table 1A of this subpart, except as provided in paragraph (b) of this section.

(2) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions guidelines as amended on October 6, 2009, the requirements listed in Table 1B of this subpart, except as provided in paragraph (b) of this section.

(3) For a designated facility as defined in § 60.32e(a)(2), the more stringent of the requirements listed in Table 1B of this subpart and Table 1A of subpart Ec of this part.

(b) For approval, a State plan shall include the requirements for emissions limits for any small HMIWI constructed on or before June 20, 1996, which is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area (defined in § 60.31e) and which burns less than 2,000 pounds per week of hospital waste and medical/infectious waste that are at least as protective as the requirements in paragraphs (b)(1) and (b)(2) of this section, as applicable. The 2,000 lb/week limitation does not apply during performance tests.

(1) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions guidelines as promulgated on September 15, 1997, the requirements listed in Table 2A of this subpart.

(2) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions guidelines as amended on October 6, 2009, the requirements listed in Table 2B of this subpart.

(c) For approval, a State plan shall include the requirements for stack opacity at least as protective as the following, as applicable:

(1) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions guidelines as promulgated on September 15, 1997, the requirements in § 60.52c(b)(1) of subpart Ec of this part.

(2) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions guidelines as amended on October 6, 2009 and a designated facility as defined in § 60.32e(a)(2), the requirements in § 60.52c(b)(2) of subpart Ec of this part.

[74 FR 51403, Oct. 6, 2009]

§ 60.34e Operator training and qualification guidelines.

For approval, a State plan shall include the requirements for operator training and qualification at least as protective as those requirements listed in § 60.53c of subpart Ec of this part. The State plan shall require compliance with these requirements according to the schedule specified in § 60.39e(e).

§60.35e Waste management guidelines.

For approval, a State plan shall include the requirements for a waste management plan at least as protective as those requirements listed in §60.55c of subpart Ec of this part.

§60.36e Inspection guidelines.

(a) For approval, a State plan shall require each small HMIWI subject to the emissions limits under §60.33e(b) and each HMIWI subject to the emissions limits under §60.33e(a)(2) and (a)(3) to undergo an initial equipment inspection that is at least as protective as the following within 1 year following approval of the State plan:

(1) At a minimum, an inspection shall include the following:

(i) Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation; clean pilot flame sensor, as necessary;

(ii) Ensure proper adjustment of primary and secondary chamber combustion air, and adjust as necessary;

(iii) Inspect hinges and door latches, and lubricate as necessary;

(iv) Inspect dampers, fans, and blowers for proper operation;

(v) Inspect HMIWI door and door gaskets for proper sealing;

(vi) Inspect motors for proper operation;

(vii) Inspect primary chamber refractory lining; clean and repair/replace lining as necessary;

(viii) Inspect incinerator shell for corrosion and/or hot spots;

(ix) Inspect secondary/tertiary chamber and stack, clean as necessary;

(x) Inspect mechanical loader, including limit switches, for proper operation, if applicable;

(xi) Visually inspect waste bed (grates), and repair/seal, as appropriate;

(xii) For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments;

(xiii) Inspect air pollution control device(s) for proper operation, if applicable;

(xiv) Inspect waste heat boiler systems to ensure proper operation, if applicable;

(xv) Inspect bypass stack components;

(xvi) Ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment; and

(xvii) Generally observe that the equipment is maintained in good operating condition.

(2) Within 10 operating days following an equipment inspection all necessary repairs shall be completed unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary repairs of the designated facility shall be completed.

(b) For approval, a State plan shall require each small HMIWI subject to the emissions limits under §60.33e(b) and each HMIWI subject to the emissions limits under §60.33e(a)(2) and (a)(3) to undergo an equipment inspection annually (no more than 12 months following the previous annual equipment inspection), as outlined in paragraph (a) of this section.

(c) For approval, a State plan shall require each small HMIWI subject to the emissions limits under §60.33e(b)(2) and each HMIWI subject to the emissions limits under §60.33e(a)(2) and (a)(3) to undergo an initial air pollution control device inspection, as applicable, that is at least as protective as the following within 1 year following approval of the State plan:

(1) At a minimum, an inspection shall include the following:

(i) Inspect air pollution control device(s) for proper operation, if applicable;

(ii) Ensure proper calibration of thermocouples, sorbent feed systems, and any other monitoring equipment; and

(iii) Generally observe that the equipment is maintained in good operating condition.

(2) Within 10 operating days following an air pollution control device inspection, all necessary repairs shall be completed unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary repairs of the designated facility shall be completed.

(d) For approval, a State plan shall require each small HMIWI subject to the emissions limits under §60.33e(b)(2)

and each HMIWI subject to the emissions limits under § 60.33e(a)(2) and (a)(3) to undergo an air pollution control device inspection, as applicable, annually (no more than 12 months following the previous annual air pollution control device inspection), as outlined in paragraph (c) of this section.

[60 FR 65414, Dec. 19, 1995, as amended at 74 FR 51403, Oct. 6, 2009]

§ 60.37e Compliance, performance testing, and monitoring guidelines.

(a) Except as provided in paragraph (b) of this section, for approval, a State plan shall include the requirements for compliance and performance testing listed in § 60.56c of subpart Ec of this part, with the following exclusions:

(1) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions limits in § 60.33e(a)(1), the test methods listed in § 60.56c(b)(7) and (8), the fugitive emissions testing requirements under § 60.56c(b)(14) and (c)(3), the CO CEMS requirements under § 60.56c(c)(4), and the compliance requirements for monitoring listed in § 60.56c(c)(5)(ii) through (v), (c)(6), (c)(7), (e)(6) through (10), (f)(7) through (10), (g)(6) through (10), and (h).

(2) For a designated facility as defined in § 60.32e(a)(1) and (a)(2) subject to the emissions limits in § 60.33e(a)(2) and (a)(3), the annual fugitive emissions testing requirements under § 60.56c(c)(3), the CO CEMS requirements under § 60.56c(c)(4), and the compliance requirements for monitoring listed in § 60.56c(c)(5)(ii) through (v), (c)(6), (c)(7), (e)(6) through (10), (f)(7) through (10), and (g)(6) through (10). Sources subject to the emissions limits under § 60.33e(a)(2) and (a)(3) may, however, elect to use CO CEMS as specified under § 60.56c(c)(4) or bag leak detection systems as specified under § 60.57c(h).

(b) Except as provided in paragraphs (b)(1) and (b)(2) of this section, for approval, a State plan shall require each small HMIWI subject to the emissions limits under § 60.33e(b) to meet the performance testing requirements listed in § 60.56c of subpart Ec of this part. The 2,000 lb/week limitation under § 60.33e(b) does not apply during performance tests.

(1) For a designated facility as defined in § 60.32e(a)(1) subject to the emissions limits under § 60.33e(b)(1), the test methods listed in § 60.56c(b)(7), (8), (12), (13) (Pb and Cd), and (14), the annual PM, CO, and HCl emissions testing requirements under § 60.56c(c)(2), the annual fugitive emissions testing requirements under § 60.56c(c)(3), the CO CEMS requirements under § 60.56c(c)(4), and the compliance requirements for monitoring listed in § 60.56c(c)(5) through (7), and (d) through (k) do not apply.

(2) For a designated facility as defined in § 60.32e(a)(2) subject to the emissions limits under § 60.33e(b)(2), the annual fugitive emissions testing requirements under § 60.56c(c)(3), the CO CEMS requirements under § 60.56c(c)(4), and the compliance requirements for monitoring listed in § 60.56c(c)(5)(ii) through (v), (c)(6), (c)(7), (e)(6) through (10), (f)(7) through (10), and (g)(6) through (10) do not apply. Sources subject to the emissions limits under § 60.33e(b)(2) may, however, elect to use CO CEMS as specified under § 60.56c(c)(4) or bag leak detection systems as specified under § 60.57c(h).

(c) For approval, a State plan shall require each small HMIWI subject to the emissions limits under § 60.33e(b) that is not equipped with an air pollution control device to meet the following compliance and performance testing requirements:

(1) Establish maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial performance test to determine compliance with applicable emission limits.

(2) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, ensure that the designated facility does not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times. Operating parameter limits do not apply during performance tests. Operation above the maximum charge rate or

below the minimum secondary chamber temperature shall constitute a violation of the established operating parameter(s).

(3) Except as provided in paragraph (c)(4) of this section, operation of the designated facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM, CO, and dioxin/furan emissions limits.

(4) The owner or operator of a designated facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the designated facility is not in violation of the applicable emissions limit(s). Repeat performance tests conducted pursuant to this paragraph must be conducted under process and control device operating conditions duplicating as nearly as possible those that indicated a violation under paragraph (c)(3) of this section.

(d) For approval, a State plan shall include the requirements for monitoring listed in §60.57c of subpart Ec of this part for HMIWI subject to the emissions limits under §60.33e(a) and (b), except as provided for under paragraph (e) of this section.

(e) For approval, a State plan shall require small HMIWI subject to the emissions limits under §60.33e(b) that are not equipped with an air pollution control device to meet the following monitoring requirements:

(1) Install, calibrate (to manufacturers' specifications), maintain, and operate a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which shall be recorded, at a minimum, once every minute throughout operation.

(2) Install, calibrate (to manufacturers' specifications), maintain, and operate a device which automatically measures and records the date, time, and weight of each charge fed into the HMIWI.

(3) The owner or operator of a designated facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day for 90 percent of the operating hours per calendar quarter that the designated facility is combusting hospital waste and/or medical/infectious waste.

(f) The owner or operator of a designated facility as defined in §60.32e(a)(1) or (a)(2) subject to emissions limits under §60.33e(a)(2), (a)(3), or (b)(2) may use the results of previous emissions tests to demonstrate compliance with the emissions limits, provided that the conditions in paragraphs (f)(1) through (f)(3) of this section are met:

(1) The designated facility's previous emissions tests must have been conducted using the applicable procedures and test methods listed in §60.56c(b) of subpart Ec of this part. Previous emissions test results obtained using EPA-accepted voluntary consensus standards are also acceptable.

(2) The HMIWI at the designated facility shall currently be operated in a manner (*e.g.*, with charge rate, secondary chamber temperature, *etc.*) that would be expected to result in the same or lower emissions than observed during the previous emissions test(s), and the HMIWI may not have been modified such that emissions would be expected to exceed (notwithstanding normal test-to-test variability) the results from previous emissions test(s).

(3) The previous emissions test(s) must have been conducted in 1996 or later.

[60 FR 65414, Dec. 19, 1995, as amended at 74 FR 51403, Oct. 6, 2009]

§60.38e Reporting and recordkeeping guidelines.

(a) Except as provided in paragraphs (a)(1) and (a)(2) of this section, for approval, a State plan shall include the reporting and recordkeeping requirements listed in §60.58c(b) through (g) of subpart Ec of this part.

(1) For a designated facility as defined in §60.32e(a)(1) subject to emissions limits under §60.33e(a)(1) or (b)(1), excluding §60.58c(b)(2)(ii) (fugitive emissions), (b)(2)(viii) (NO_X reagent), (b)(2)(xvii) (air pollution control device

inspections), (b)(2)(xviii) (bag leak detection system alarms), (b)(2)(xix) (CO CEMS data), and (b)(7) (siting documentation).

(2) For a designated facility as defined in § 60.32e(a)(1) or (a)(2) subject to emissions limits under § 60.33e(a)(2), (a)(3), or (b)(2), excluding § 60.58c(b)(2)(xviii) (bag leak detection system alarms), (b)(2)(xix) (CO CEMS data), and (b)(7) (siting documentation).

(b) For approval, a State plan shall require the owner or operator of each HMIWI subject to the emissions limits under § 60.33e to:

(1) As specified in § 60.36e, maintain records of the annual equipment inspections that are required for each HMIWI subject to the emissions limits under § 60.33e(a)(2), (a)(3), and (b), and the annual air pollution control device inspections that are required for each HMIWI subject to the emissions limits under § 60.33e(a)(2), (a)(3), and (b)(2), any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the State regulatory agency; and

(2) Submit an annual report containing information recorded under paragraph (b)(1) of this section no later than 60 days following the year in which data were collected. Subsequent reports shall be sent no later than 12 calendar months following the previous report (once the unit is subject to permitting requirements under Title V of the Act, the owner or operator must submit these reports semiannually). The report shall be signed by the facilities manager.

[60 FR 65414, Dec. 19, 1995, as amended at 74 FR 51404, Oct. 6, 2009]

§ 60.39e Compliance times.

(a) Each State in which a designated facility is operating shall submit to the Administrator a plan to implement and enforce the emissions guidelines as specified in paragraphs (a)(1) and (a)(2) of this section:

(1) Not later than September 15, 1998, for the emissions guidelines as promulgated on September 15, 1997.

(2) Not later than October 6, 2010, for the emissions guidelines as amended on October 6, 2009.

(b) Except as provided in paragraphs (c) and (d) of this section, State plans shall provide that designated facilities comply with all requirements of the State plan on or before the date 1 year after EPA approval of the State plan, regardless of whether a designated facility is identified in the State plan inventory required by § 60.25(a) of subpart B of this part.

(c) State plans that specify measurable and enforceable incremental steps of progress towards compliance for designated facilities planning to install the necessary air pollution control equipment may allow compliance on or before the date 3 years after EPA approval of the State plan (but not later than September 16, 2002), for the emissions guidelines as promulgated on September 15, 1997, and on or before the date 3 years after approval of an amended State plan (but not later than October 6, 2014), for the emissions guidelines as amended on October 6, 2009). Suggested measurable and enforceable activities to be included in State plans are:

(1) Date for submitting a petition for site-specific operating parameters under § 60.56c(j) of subpart Ec of this part.

(2) Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);

(3) Date for obtaining design drawings of the air pollution control device(s);

(4) Date for ordering the air pollution control device(s);

(5) Date for obtaining the major components of the air pollution control device(s);

(6) Date for initiation of site preparation for installation of the air pollution control device(s);

(7) Date for initiation of installation of the air pollution control device(s);

(8) Date for initial startup of the air pollution control device(s); and

(9) Date for initial compliance test(s) of the air pollution control device(s).

(d) State plans that include provisions allowing designated facilities to petition the State for extensions beyond the compliance times required in paragraph (b) of this section shall:

(1) Require that the designated facility requesting an extension submit the following information in time to allow the State adequate time to grant or deny the extension within 1 year after EPA approval of the State plan:

(i) Documentation of the analyses undertaken to support the need for an extension, including an explanation of why up to 3 years after EPA approval of the State plan is sufficient time to comply with the State plan while 1 year after EPA approval of the State plan is not sufficient. The documentation shall also include an evaluation of the option to transport the waste offsite to a commercial medical waste treatment and disposal facility on a temporary or permanent basis; and

(ii) Documentation of measurable and enforceable incremental steps of progress to be taken towards compliance with the emission guidelines.

(2) Include procedures for granting or denying the extension; and

(3) If an extension is granted, require expeditious compliance with the emissions guidelines on or before the date 3 years after EPA approval of the state plan (but not later than September 16, 2002), for the emissions guidelines as promulgated on September 15, 1997, and on or before the date 3 years after EPA approval of an amended state plan (but not later than October 6, 2014), for the emissions guidelines as amended on October 6, 2009.

(e) For approval, a State plan shall require compliance with § 60.34e—Operator training and qualification guidelines and § 60.36e—Inspection guidelines by the date 1 year after EPA approval of a State plan.

(f) The Administrator shall develop, implement, and enforce a plan for existing HMIWI located in any State that has not submitted an approvable plan within 2 years after September 15, 1997, for the emissions guidelines as promulgated on September 15, 1997, and within 2 years after October 6, 2009 for the emissions guidelines as amended on October 6, 2009. Such plans shall ensure that each designated facility is in compliance with the provisions of this subpart no later than 5 years after September 15, 1997, for the emissions guidelines as promulgated on September 15, 1997, and no later than 5 years after October 6, 2009 for the emissions guidelines as amended on October 6, 2009.

[60 FR 65414, Dec. 19, 1995, as amended at 74 FR 51404, Oct. 6, 2009; 76 FR 18412, Apr. 4, 2011]

TABLE 1A TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT DESIGNATED FACILITIES AS DEFINED IN § 60.32e(a)(1)

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Particulate matter.	Milligrams per dry standard cubic meter (mg/dscm) (grains per dry standard cubic foot (gr/dscf)).	115 (0.05)	69 (0.03)	34 (0.015)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method 26A or 29 of appendix A–8 of part 60.
Carbon monoxide.	Parts per million by volume (ppmv).	40	40	40	3-run average (1-hour minimum sample time per run).	EPA Reference Method 10 or 10B of appendix A–4 of part 60.

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Dioxins/furans.	Nanograms per dry standard cubic meter total dioxins/furans (ng/dscm) (grains per billion dry standard cubic feet (gr/10^9 dscf)) or ng/dscm TEQ (gr/10^9 dscf).	125 (55) or 2.3 (1.0).	125 (55) or 2.3 (1.0).	125 (55) or 2.3 (1.0)	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	ppmv or percent reduction.	100 or 93%	100 or 93%	100 or 93%	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide.	ppmv	55	55	55	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides.	ppmv	250	250	250	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	mg/dscm (grains per thousand dry standard cubic feet (gr/10^3 dscf)) or percent reduction.	1.2 (0.52) or 70%	1.2 (0.52) or 70%	1.2 (0.52) or 70%	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	mg/dscm (gr/10^3 dscf) or percent reduction.	0.16 (0.07) or 65%.	0.16 (0.07) or 65%.	0.16 (0.07) or 65%	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Mercury	mg/dscm (gr/10^3 dscf) or percent reduction.	0.55 (0.24) or 85%.	0.55 (0.24) or 85%.	0.55 (0.24) or 85%	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[60 FR 65414, Dec. 19, 1995, as amended at 74 FR 51405, Oct. 6, 2009; 76 FR 18412, Apr. 4, 2011]

TABLE 1B TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT DESIGNATED FACILITIES AS DEFINED IN § 60.32e(a)(1) AND (a)(2)

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Particulate matter.	Milligrams per dry standard cubic meter (mg/dscm) (grains per dry standard cubic foot (gr/dscf)).	66 (0.029)	46 (0.020)	25 (0.011)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method 26A or 29 of appendix A–8 of part 60.
Carbon monoxide.	Parts per million by volume (ppmv).	20	5.5	11	3-run average (1-hour minimum sample time per run).	EPA Reference Method 10 or 10B of appendix A–4 of part 60.
Dioxins/furans.	Nanograms per dry standard cubic meter total dioxins/furans (ng/dscm) (grains per billion dry standard cubic feet (gr/10^9 dscf)) or ng/dscm TEQ (gr/10^9 dscf).	16 (7.0) or 0.013 (0.0057).	0.85 (0.37) or 0.020 (0.0087).	9.3 (4.1) or 0.054 (0.024).	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	ppmv	44	7.7	6.6	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide.	ppmv	4.2	4.2	9.0	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides.	ppmv	190	190	140	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	mg/dscm (grains per thousand dry standard cubic feet (gr/10^3 dscf)).	0.31 (0.14)	0.018 (0.0079)	0.036 (0.016)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	mg/dscm (gr/10^3 dscf).	0.017 (0.0074)	0.013 (0.0057)	0.0092 (0.0040)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Mercury ..	mg/dscm (gr/10^3 dscf).	0.014 (0.0061)	0.025 (0.011)	0.018 (0.0079)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[74 FR 51406, Oct. 6, 2009]

TABLE 2A TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL HMIWI WHICH MEET THE CRITERIA UNDER § 60.33e(b)(1)

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI emissions limits	Averaging time [1]	Method for demonstrating compliance [2]
Particulate matter.	mg/dscm (gr/dscf).	197 (0.086)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method 26A or 29 of appendix A–8 of part 60.
Carbon monoxide.	ppmv	40	3-run average (1-hour minimum sample time per run).	EPA Reference Method 10 or 10B of appendix A–4 of part 60.
Dioxins/furans ..	ng/dscm total dioxins/furans (gr/10^9 dscf) or ng/dscm TEQ (gr/10^9 dscf).	800 (350) or 15 (6.6) ...	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	ppmv	3,100	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide ...	ppmv	55	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides	ppmv	250	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	mg/dscm (gr/10^3 dscf).	10 (4.4)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	mg/dscm (gr/10^3 dscf).	4 (1.7)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Mercury	mg/dscm (gr/10^3 dscf).	7.5 (3.3)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[74 FR 51407, Oct. 6, 2009]

TABLE 2B TO SUBPART Ce OF PART 60—EMISSIONS LIMITS FOR SMALL HMIWI WHICH MEET THE CRITERIA UNDER § 60.33e(b)(2)

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emissions limits	Averaging time [1]	Method for demonstrating compliance [2]
Particulate matter.	mg/dscm (gr/dscf).	87 (0.038)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method 26A or 29 of appendix A–8 of part 60.
Carbon monoxide.	ppmv	20	3-run average (1-hour minimum sample time per run).	EPA Reference Method 10 or 10B of appendix A–4 of part 60.

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI Emissions limits	Averaging time [1]	Method for demonstrating compliance [2]
Dioxins/furans ..	ng/dscm total dioxins/furans (gr/10^9 dscf) or ng/dscm TEQ (gr/10^9 dscf).	240 (100) or 5.1 (2.2) ..	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	ppmv	810	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide ...	ppmv	55	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides	ppmv	130	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	mg/dscm (gr/10^3 dscf).	0.50 (0.22)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	mg/dscm (gr/10^3 dscf).	0.11 (0.048)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Mercury	mg/dscm (gr/10^3 dscf).	0.0051 (0.0022)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[74 FR 51407, Oct. 6, 2009]

Subpart D—Standards of Performance for Fossil-Fuel-Fired Steam Generators

SOURCE: 72 FR 32717, June 13, 2007, unless otherwise noted.

§ 60.40 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each fossil-fuel-fired steam generating unit of more than 73 megawatts (MW) heat input rate (250 million British thermal units per hour (MMBtu/hr)).

(2) Each fossil-fuel and wood-residue-fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 73 MW (250 MMBtu/hr).

(b) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels as defined in this subpart, shall not bring that unit under the applicability of this subpart.

(c) Except as provided in paragraph (d) of this section, any facility under paragraph (a) of this section that commenced construction or modification after August 17, 1971, is subject to the requirements of this subpart.

(d) The requirements of §§ 60.44 (a)(4), (a)(5), (b) and (d), and 60.45(f)(4)(vi) are applicable to lignite-fired steam generating units that commenced construction or modification after December 22, 1976.

(e) Any facility subject to either subpart Da or KKKK of this part is not subject to this subpart.

[72 FR 32717, June 13, 2007, as amended at 77 FR 9447, Feb. 16, 2012]

§ 60.41 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, and in subpart A of this part.

Boiler operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the steam-generating unit. It is not necessary for fuel to be combusted the entire 24-hour period.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388 (incorporated by reference, see § 60.17).

Coal refuse means waste-products of coal mining, cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay,

and other organic and inorganic material.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

Fossil fuel and wood residue-fired steam generating unit means a furnace or boiler used in the process of burning fossil fuel and wood residue for the purpose of producing steam by heat transfer.

Fossil-fuel-fired steam generating unit means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

Natural gas means a fluid mixture of hydrocarbons (e.g., methane, ethane, or propane), composed of at least 70 percent methane by volume or that has a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot), that maintains a gaseous state under ISO conditions. In addition, *natural gas* contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Finally, natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Wood residue means bark, sawdust, slabs, chips, shavings, mill trim, and other wood products derived from wood processing and forest management operations.

[72 FR 32717, June 13, 2007, as amended at 77 FR 9447, Feb. 16, 2012]

§ 60.42 Standard for particulate matter (PM).

(a) Except as provided under paragraphs (b), (c), (d), and (e) of this section, on and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases that:

(1) Contain PM in excess of 43 nanograms per joule (ng/J) heat input (0.10 lb/MMBtu) derived from fossil fuel or fossil fuel and wood residue.

(2) Exhibit greater than 20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity.

(b)(1) On or after December 28, 1979, no owner or operator shall cause to be discharged into the atmosphere from the Southwestern Public Service Company's Harrington Station #1, in Amarillo, TX, any gases which exhibit greater than 35 percent opacity, except that a maximum or 42 percent opacity shall be permitted for not more than 6 minutes in any hour.

(2) Interstate Power Company shall not cause to be discharged into the atmosphere from its Lansing Station Unit No. 4 in Lansing, IA, any gases which exhibit greater than 32 percent opacity, except that a maximum of 39 percent opacity shall be permitted for not more than six minutes in any hour.

(c) As an alternate to meeting the requirements of paragraph (a) of this section, an owner or operator that elects to install, calibrate, maintain, and operate a continuous emissions monitoring systems (CEMS) for measuring PM emissions can petition the Administrator (in writing) to comply with § 60.42Da(a) of subpart Da of this part. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in § 60.42Da(a) of subpart Da of this part.

(d) An owner or operator of an affected facility that combusts only natural gas is exempt from the PM and opacity standards specified in paragraph (a) of this section.

(e) An owner or operator of an affected facility that combusts only gaseous or liquid fossil fuel (excluding residual oil) with potential SO_2 emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and that does not use post-combustion technology to reduce emissions of SO_2 or PM is exempt from the PM standards specified in paragraph (a) of this section.

[60 FR 65415, Dec. 19, 1995, as amended at 76 FR 3522, Jan. 20, 2011; 74 FR 5077, Jan. 28, 2009; 77 FR 9447, Feb. 16, 2012]

§60.43 Standard for sulfur dioxide (SO_2).

(a) Except as provided under paragraph (d) of this section, on and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases that contain SO_2 in excess of:

(1) 340 ng/J heat input (0.80 lb/MMBtu) derived from liquid fossil fuel or liquid fossil fuel and wood residue.

(2) 520 ng/J heat input (1.2 lb/MMBtu) derived from solid fossil fuel or solid fossil fuel and wood residue, except as provided in paragraph (e) of this section.

(b) Except as provided under paragraph (d) of this section, when different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

$$PS_{SO_2} = \frac{y\ (340) + z\ (520)}{(y + z)}$$

Where:

PS_{SO_2} = Prorated standard for S_{O2} when burning different fuels simultaneously, in ng/J heat input derived from all fossil fuels or from all fossil fuels and wood residue fired;

y = Percentage of total heat input derived from liquid fossil fuel; and

z = Percentage of total heat input derived from solid fossil fuel.

(c) Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.

(d) As an alternate to meeting the requirements of paragraphs (a) and (b) of this section, an owner or operator can petition the Administrator (in writing) to comply with §60.43Da(i)(3) of subpart Da of this part or comply with §60.42b(k)(4) of subpart Db of this part, as applicable to the affected source. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in §60.43Da(i)(3) of subpart Da of this part or §60.42b(k)(4) of subpart Db of this part, as applicable to the affected source.

(e) Units 1 and 2 (as defined in appendix G of this part) at the Newton Power Station owned or operated by the Central Illinois Public Service Company will be in compliance with paragraph (a)(2) of this section if Unit 1 and Unit 2 individually comply with paragraph (a)(2) of this section or if the combined emission rate from Units 1 and 2 does not exceed 470 ng/J (1.1 lb/MMBtu) combined heat input to Units 1 and 2.

[60 FR 65415, Dec. 19, 1995, as amended at 74 FR 5077, Jan. 28, 2009]

§60.44 Standard for nitrogen oxides (NO_X).

(a) Except as provided under paragraph (e) of this section, on and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases that contain NO_X, expressed as NO_2 in excess of:

(1) 86 ng/J heat input (0.20 lb/MMBtu) derived from gaseous fossil fuel.

(2) 129 ng/J heat input (0.30 lb/MMBtu) derived from liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.

(3) 300 ng/J heat input (0.70 lb/MMBtu) derived from solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse).

(4) 260 ng/J heat input (0.60 lb MMBtu) derived from lignite or lignite and wood residue (except as provided under paragraph (a)(5) of this section).

(5) 340 ng/J heat input (0.80 lb MMBtu) derived from lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit.

(b) Except as provided under paragraphs (c), (d), and (e) of this section, when different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) is determined by proration using the following formula:

$$PS_{NO_X} = \frac{w\ (260) + x\ (86) + y\ (130) + z\ (300)}{(w + x + y + z)}$$

Where:

PS_{NOX} = Prorated standard for NO_X when burning different fuels simultaneously, in ng/J heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

w = Percentage of total heat input derived from lignite;

x = Percentage of total heat input derived from gaseous fossil fuel;

y = Percentage of total heat input derived from liquid fossil fuel; and

z = Percentage of total heat input derived from solid fossil fuel (except lignite).

(c) When a fossil fuel containing at least 25 percent, by weight, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel or wood residue, the standard for NO_X does not apply.

(d) Except as provided under paragraph (e) of this section, cyclone-fired units which burn fuels containing at least 25 percent of lignite that is mined in North Dakota, South Dakota, or Montana remain subject to paragraph (a)(5) of this section regardless of the types of fuel combusted in combination with that lignite.

(e) As an alternate to meeting the requirements of paragraphs (a), (b), and (d) of this section, an owner or operator can petition the Administrator (in writing) to comply with § 60.44Da(e)(3) of subpart Da of this part. If the Administrator grants the petition, the source will from then on (unless the unit is modified or reconstructed in the future) have to comply with the requirements in § 60.44Da(e)(3) of subpart Da of this part.

§ 60.45 Emissions and fuel monitoring.

(a) Each owner or operator of an affected facility subject to the applicable emissions standard shall install, calibrate, maintain, and operate continuous opacity monitoring system (COMS) for measuring opacity and a continuous emissions monitoring system (CEMS) for measuring SO_2 emissions, NO_X emissions, and either oxygen (O_2) or carbon dioxide (CO_2) except as provided in paragraph (b) of this section.

(b) Certain of the CEMS and COMS requirements under paragraph (a) of this section do not apply to owners or operators under the following conditions:

(1) For a fossil-fuel-fired steam generator that combusts only gaseous or liquid fossil fuel (excluding residual oil) with potential SO_2 emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and that does not use post-combustion technology to reduce emissions of SO_2 or PM, COMS for measuring the opacity of emissions and CEMS for measuring SO_2 emissions are not required if the owner or operator monitors SO_2 emissions by fuel sampling and analysis or fuel receipts.

(2) For a fossil-fuel-fired steam generator that does not use a flue gas desulfurization device, a CEMS for measuring SO_2 emissions is not required if the owner or operator monitors SO_2 emissions by fuel sampling and analysis.

(3) Notwithstanding § 60.13(b), installation of a CEMS for NO_X may be delayed until after the initial performance tests under § 60.8 have been conducted. If the owner or operator demonstrates during the performance test that emissions of NO_X are less than 70 percent of the applicable standards in § 60.44, a CEMS for measuring NO_X emissions is not required. If the initial performance test results show that NO_X emissions are greater than 70 percent of the applicable standard, the owner or operator shall install a CEMS for NO_X within one year after the date of the initial performance tests under § 60.8 and comply with all other applicable monitoring requirements under this part.

(4) If an owner or operator is not required to and elects not to install any CEMS for either SO_2 or NO_X, a CEMS for measuring either O_2 or CO_2 is not required.

(5) For affected facilities using a PM CEMS, a bag leak detection system to

monitor the performance of a fabric filter (baghouse) according to the most current requirements in §60.48Da of this part, or an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in section §60.48Da of this part a COMS is not required.

(6) A COMS for measuring the opacity of emissions is not required for an affected facility that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2, or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur, and is operated such that emissions of CO to the atmosphere from the affected source are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis. Owners and operators of affected sources electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (b)(6)(i) through (iv) of this section.

(i) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (b)(6)(i)(A) through (D) of this section.

(A) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in §60.58b(i)(3) of subpart Eb of this part.

(B) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(C) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in §60.13(h)(2).

(D) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(ii) You must calculate the 1-hour average CO emissions levels for each boiler operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each boiler operating day.

(iii) You must evaluate the preceding 24-hour average CO emission level each boiler operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.

(iv) You must record the CO measurements and calculations performed according to paragraph (b)(6) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.

(7) An owner or operator of an affected facility subject to an opacity standard under §60.42 that elects to not use a COMS because the affected facility burns only fuels as specified under paragraph (b)(1) of this section, monitors PM emissions as specified under paragraph (b)(5) of this section, or monitors CO emissions as specified under paragraph (b)(6) of this section, shall conduct a performance test using Method 9 of appendix A–4 of this part and the procedures in §60.11 to demonstrate compliance with the applicable limit in §60.42 by April 29, 2011 or within 45 days after stopping use of an existing COMS, whichever is later, and shall comply with either paragraph (b)(7)(i), (b)(7)(ii), or (b)(7)(iii) of this section. The observation period for Method 9 of appendix A–4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations

are less than or equal to 20 percent during the initial 60 minutes of observation. The permitting authority may exempt owners or operators of affected facilities burning only natural gas from the opacity monitoring requirements.

(i) Except as provided in paragraph (b)(7)(ii) or (b)(7)(iii) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A–4 of this part performance tests using the procedures in paragraph (b)(7) of this section according to the applicable schedule in paragraphs (b)(7)(i)(A) through (b)(7)(i)(D) of this section, as determined by the most recent Method 9 of appendix A–4 of this part performance test results.

(A) If no visible emissions are observed, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(B) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(C) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(D) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.

(ii) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 of this part performance test, elect to perform subsequent monitoring using Method 22 of appendix A–7 of this part according to the procedures specified in paragraphs (b)(7)(ii)(A) and (B) of this section.

(A) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A–7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.*, 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (i.e., 90 seconds) or conduct a new Method 9 of appendix A–4 of this part performance test using the procedures in paragraph (b)(7) of this section within 45 calendar days according to the requirements in § 60.46(b)(3).

(B) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(iii) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 performance tests,

elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (b)(7)(ii) of this section. For reference purposes in preparing the monitoring plan, see OAQPS ''Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.'' This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(8) A COMS for measuring the opacity of emissions is not required for an affected facility at which the owner or operator installs, calibrates, operates, and maintains a particulate matter continuous parametric monitoring system (PM CPMS) according to the requirements specified in subpart UUUUU of part 63.

(c) For performance evaluations under § 60.13(c) and calibration checks under § 60.13(d), the following procedures shall be used:

(1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO_2 and NO_X continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in § 60.46(d).

(2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.

(3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_X the span value shall be determined using one of the following procedures:

(i) Except as provided under paragraph (c)(3)(ii) of this section, SO_2 and NO_X span values shall be determined as follows:

Fossil fuel	In parts per million	
	Span value for SO_2	Span value for NO_X
Gas	([1])	500.
Liquid	1,000	500.
Solid	1,500	1,000.
Combinations	1,000y + 1,500z	500 (x + y) + 1,000z.

[1] Not applicable.

Where:

x = Fraction of total heat input derived from gaseous fossil fuel;

y = Fraction of total heat input derived from liquid fossil fuel; and

z = Fraction of total heat input derived from solid fossil fuel.

(ii) As an alternative to meeting the requirements of paragraph (c)(3)(i) of this section, the owner or operator of an affected facility may elect to use the SO_2 and NO_X span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter.

(4) All span values computed under paragraph (c)(3)(i) of this section for burning combinations of fossil fuels shall be rounded to the nearest 500 ppm. Span values that are computed under paragraph (c)(3)(ii) of this section shall be rounded off according to the applicable procedures in section 2 of appendix A to part 75 of this chapter.

(5) For a fossil-fuel-fired steam generator that simultaneously burns fossil fuel and nonfossil fuel, the span value of all CEMS shall be subject to the Administrator's approval.

(d) [Reserved]

(e) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu):

(1) When a CEMS for measuring O_2 is selected, the measurement of the pollutant concentration and O_2 concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF\left(\frac{20.9}{(20.9 - \%O_2)}\right)$$

Where E, C, F, and $\%O_2$ are determined under paragraph (f) of this section.

(2) When a CEMS for measuring CO_2 is selected, the measurement of the pollutant concentration and CO_2 concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c\left(\frac{100}{\%CO_2}\right)$$

Where E, C, F_c and $\%CO_2$ are determined under paragraph (f) of this section.

(f) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows:

(1) E = pollutant emissions, ng/J (lb/MMBtu).

(2) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^4 M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO_2 and 46.01 for NO_X.

(3) $\%O_2$, $\%CO_2$ = O_2 or CO_2 volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.

(4) F, F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO_2 generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows:

(i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see § 60.17), F = $2{,}723 \times 10^{-17}$ dscm/J (10,140 dscf/MMBtu) and F_c = 0.532×10^{-17} scm CO_2/J (1,980 scf CO_2/MMBtu).

(ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see § 60.17), F = 2.637×10^{-7} dscm/J (9,820 dscf/MMBtu) and F_c = 0.486×10^{-7} scm CO_2/J (1,810 scf CO_2/MMBtu).

(iii) For liquid fossil fuels including crude, residual, and distillate oils, F = 2.476×10^{-7} dscm/J (9,220 dscf/MMBtu) and F_c = 0.384×10^{-7} scm CO_2/J (1,430 scf CO_2/MMBtu).

(iv) For gaseous fossil fuels, F = 2.347×10^{-7} dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, F_c = 0.279×10^{-7} scm CO_2/J (1,040 scf CO_2/MMBtu) for natural gas, 0.322×10^{-7} scm CO_2/J (1,200 scf CO_2/MMBtu) for propane, and 0.338×10^{-7} scm CO_2/J (1,260 scf CO_2/MMBtu) for butane.

(v) For bark F = 2.589×10^{-7} dscm/J (9,640 dscf/MMBtu) and F_c = 0.500×10^{-7} scm CO_2/J (1,840 scf CO_2/MMBtu). For wood residue other than bark F = 2.492×10^{-7} dscm/J (9,280 dscf/MMBtu) and F_c = 0.494×10^{-7} scm CO_2/J (1,860 scf CO_2/MMBtu).

(vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see § 60.17), F = 2.659×10^{-7} dscm/J (9,900 dscf/MMBtu) and F_c = 0.516×10^{-7} scm CO_2/J (1,920 scf CO_2/MMBtu).

(5) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or Fc factor (scm CO_2/J, or scf CO_2/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = 10^{-6}\,\frac{[227.2\ (\%H) + 95.5\ (\%C) + 35.6\ (\%S) + 8.7\ (\%N) - 28.7\ (\%O)]}{GCV}$$

$$F_c = \frac{2.0\times10^{-5}(\%C)}{GCV\ (SI\ units)}$$

$$F = 10^{-6}\,\frac{[3.64\ (\%H) + 1.53\ (\%C) + 0.57\ (\%S) + 0.14\ (\%N) - 0.46\ (\%O)]}{GCV\ (English\ units)}$$

$$F_c = \frac{20.0\ (\%C)}{GCV\ (SI\ units)}$$

$$F_c = \frac{321\times10^{3}\ (\%C)}{GCV\ (English\ units)}$$

(i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O_2 (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see §60.17.)

(ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see §60.17.)

(iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or Fc value shall be subject to the Administrator's approval.

(6) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or Fc factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^{n} X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^{n} X_i \left(F_c\right)_i$$

Where:

X_i = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or $(F_c)_i$ = Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

(g) Excess emission and monitoring system performance reports shall be submitted to the Administrator semiannually for each six-month period in the calendar year. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. Each excess emission and MSP report shall include the information required in §60.7(c). Periods of excess emissions and monitoring systems (MS) downtime that shall be reported are defined as follows:

(1) *Opacity*. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

(i) For sources subject to the opacity standard of §60.42(b)(1), excess emissions are defined as any six-minute period during which the average opacity

of emissions exceeds 35 percent opacity, except that one six-minute average per hour of up to 42 percent opacity need not be reported.

(ii) For sources subject to the opacity standard of § 60.42(b)(2), excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 32 percent opacity, except that one six-minute average per hour of up to 39 percent opacity need not be reported.

(2) *Sulfur dioxide*. Excess emissions for affected facilities are defined as:

(i) For affected facilities electing not to comply with § 60.43(d), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of SO_2 as measured by a CEMS exceed the applicable standard in § 60.43; or

(ii) For affected facilities electing to comply with § 60.43(d), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of SO_2 as measured by a CEMS exceed the applicable standard in § 60.43. Facilities complying with the 30-day SO_2 standard shall use the most current associated SO_2 compliance and monitoring requirements in §§ 60.48Da and 60.49Da of subpart Da of this part or §§ 60.45b and 60.47b of subpart Db of this part, as applicable.

(3) *Nitrogen oxides*. Excess emissions for affected facilities using a CEMS for measuring NO_X are defined as:

(i) For affected facilities electing not to comply with § 60.44(e), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards in § 60.44; or

(ii) For affected facilities electing to comply with § 60.44(e), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of NO_X as measured by a CEMS exceed the applicable standard in § 60.44. Facilities complying with the 30-day NO_X standard shall use the most current associated NO_X compliance and monitoring requirements in §§ 60.48Da and 60.49Da of subpart Da of this part.

(4) *Particulate matter*. Excess emissions for affected facilities using a CEMS for measuring PM are defined as any boiler operating day period during which the average emissions (arithmetic average of all operating one-hour periods) exceed the applicable standards in § 60.42. Affected facilities using PM CEMS must follow the most current applicable compliance and monitoring provisions in §§ 60.48Da and 60.49Da of subpart Da of this part.

(h) The owner or operator of an affected facility subject to the opacity limits in § 60.42 that elects to monitor emissions according to the requirements in § 60.45(b)(7) shall maintain records according to the requirements specified in paragraphs (h)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (h)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (h)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements

specified in the site-specific monitoring plan approved by the Administrator.

[60 FR 65415, Dec. 19, 1995, as amended at 74 FR 5077, Jan. 28, 2009; 76 FR 3522, Jan. 20, 2011; 77 FR 9447, Feb. 16, 2012]

§ 60.46 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, and subsequent performance tests as requested by the EPA Administrator, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (d) of this section.

(b) The owner or operator shall determine compliance with the PM, SO_2, and NO_X standards in §§ 60.42, 60.43, and 60.44 as follows:

(1) The emission rate (E) of PM, SO_2, or NO_X shall be computed for each run using the following equation:

$$E = CF_d\left(\frac{20.9}{(20.9 - \%O_2)}\right)$$

Where:

E = Emission rate of pollutant, ng/J (1b/million Btu);

C = Concentration of pollutant, ng/dscm (1b/dscf);

$\%O_2$ = O_2 concentration, percent dry basis; and

F_d = Factor as determined from Method 19 of appendix A of this part.

(2) Method 5 of appendix A of this part shall be used to determine the PM concentration (C) at affected facilities without wet flue-gas-desulfurization (FGD) systems and Method 5B of appendix A of this part shall be used to determine the PM concentration (C) after FGD systems.

(i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train shall be set to provide an average gas temperature of 160±14 °C (320±25 °F).

(ii) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O_2 concentration ($\%O_2$). The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate sample. If the grab sampling procedure is used, the O_2 concentration for the run shall be the arithmetic mean of the sample O_2 concentrations at all traverse points.

(iii) If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 of appendix A of this part is used to locate the 12 O_2 traverse points.

(3) Method 9 of appendix A of this part and the procedures in § 60.11 shall be used to determine opacity.

(4) Method 6 of appendix A of this part shall be used to determine the SO_2 concentration.

(i) The sampling site shall be the same as that selected for the particulate sample. The sampling location in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). The sampling time and sample volume for each sample run shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Two samples shall be taken during a 1-hour period, with each sample taken within a 30-minute interval.

(ii) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O_2 concentration ($\%O_2$). The O_2 sample shall be taken simultaneously with, and at the same point as, the SO_2 sample. The SO_2 emission rate shall be computed for each pair of SO_2 and O_2 samples. The SO_2 emission rate (E) for each run shall be the arithmetic mean of the results of the two pairs of samples.

(5) Method 7 of appendix A of this part shall be used to determine the NO_X concentration.

(i) The sampling site and location shall be the same as for the SO_2 sample. Each run shall consist of four grab samples, with each sample taken at about 15-minute intervals.

(ii) For each NO_X sample, the emission rate correction factor, grab sampling and analysis procedure of Method 3B of appendix A of this part shall be

used to determine the O_2 concentration ($\%O_2$). The sample shall be taken simultaneously with, and at the same point as, the NO_X sample.

(iii) The NO_X emission rate shall be computed for each pair of NO_X and O_2 samples. The NO_X emission rate (E) for each run shall be the arithmetic mean of the results of the four pairs of samples.

(c) When combinations of fossil fuels or fossil fuel and wood residue are fired, the owner or operator (in order to compute the prorated standard as shown in §§ 60.43(b) and 60.44(b)) shall determine the percentage (w, x, y, or z) of the total heat input derived from each type of fuel as follows:

(1) The heat input rate of each fuel shall be determined by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned.

(2) ASTM Methods D2015, or D5865 (solid fuels), D240 (liquid fuels), or D1826 (gaseous fuels) (all of these methods are incorporated by reference, see § 60.17) shall be used to determine the gross calorific values of the fuels. The method used to determine the calorific value of wood residue must be approved by the Administrator.

(3) Suitable methods shall be used to determine the rate of each fuel burned during each test period, and a material balance over the steam generating system shall be used to confirm the rate.

(d) The owner or operator may use the following as alternatives to the reference methods and procedures in this section or in other sections as specified:

(1) The emission rate (E) of PM, SO_2 and NO_X may be determined by using the Fc factor, provided that the following procedure is used:

(i) The emission rate (E) shall be computed using the following equation:

$$E = CF_c\left(\frac{100}{\%CO_2}\right)$$

Where:

E = Emission rate of pollutant, ng/J (lb/MMBtu);

C = Concentration of pollutant, ng/dscm (lb/dscf);

$\%CO_2$ = CO_2 concentration, percent dry basis; and

F_c = Factor as determined in appropriate sections of Method 19 of appendix A of this part.

(ii) If and only if the average Fc factor in Method 19 of appendix A of this part is used to calculate E and either E is from 0.97 to 1.00 of the emission standard or the relative accuracy of a continuous emission monitoring system is from 17 to 20 percent, then three runs of Method 3B of appendix A of this part shall be used to determine the O_2 and CO_2 concentration according to the procedures in paragraph (b)(2)(ii), (4)(ii), or (5)(ii) of this section. Then if F_o (average of three runs), as calculated from the equation in Method 3B of appendix A of this part, is more than ±3 percent than the average F_o value, as determined from the average values of F_d and F_c in Method 19 of appendix A of this part, *i.e.*, F_{oa} = 0.209 (F_{da}/F_{ca}), then the following procedure shall be followed:

(A) When F_o is less than 0.97 F_{oa}, then E shall be increased by that proportion under 0.97 F_{oa}, *e.g.*, if F_o is 0.95 F_{oa}, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the emission standard.

(B) When F_o is less than 0.97 F_{oa} and when the average difference (d) between the continuous monitor minus the reference methods is negative, then E shall be increased by that proportion under 0.97 F_{oa}, *e.g.*, if F_o is 0.95 F_{oa}, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(C) When F_o is greater than 1.03 F_{oa} and when the average difference d is positive, then E shall be decreased by that proportion over 1.03 F_{oa}, *e.g.*, if F_o is 1.05 F_{oa}, E shall be decreased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(2) For Method 5 or 5B of appendix A–3 of this part, Method 17 of appendix A–6 of this part may be used at facilities with or without wet FGD systems if the stack gas temperature at the sampling location does not exceed an average temperature of 160 °C (320 °F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A–3 of this part

may be used with Method 17 of appendix A–6 of this part only if it is used after wet FGD systems. Method 17 of appendix A–6 of this part shall not be used after wet FGD systems if the effluent gas is saturated or laden with water droplets.

(3) Particulate matter and SO_2 may be determined simultaneously with the Method 5 of appendix A of this part train provided that the following changes are made:

(i) The filter and impinger apparatus in sections 2.1.5 and 2.1.6 of Method 8 of appendix A of this part is used in place of the condenser (section 2.1.7) of Method 5 of appendix A of this part.

(ii) All applicable procedures in Method 8 of appendix A of this part for the determination of SO_2 (including moisture) are used:

(4) For Method 6 of appendix A of this part, Method 6C of appendix A of this part may be used. Method 6A of appendix A of this part may also be used whenever Methods 6 and 3B of appendix A of this part data are specified to determine the SO_2 emission rate, under the conditions in paragraph (d)(1) of this section.

(5) For Method 7 of appendix A of this part, Method 7A, 7C, 7D, or 7E of appendix A of this part may be used. If Method 7C, 7D, or 7E of appendix A of this part is used, the sampling time for each run shall be at least 1 hour and the integrated sampling approach shall be used to determine the O_2 concentration ($\%O_2$) for the emission rate correction factor.

(6) For Method 3 of appendix A of this part, Method 3A or 3B of appendix A of this part may be used.

(7) For Method 3B of appendix A of this part, Method 3A of appendix A of this part may be used.

[60 FR 65415, Dec. 19, 1995, as amended at 74 FR 5078, Jan. 28, 2009]

Subpart Da—Standards of Performance for Electric Utility Steam Generating Units

SOURCE: 72 FR 32722, June 13, 2007, unless otherwise noted.

§ 60.40Da Applicability and designation of affected facility.

(a) Except as specified in paragraph (e) of this section, the affected facility to which this subpart applies is each electric utility steam generating unit:

(1) That is capable of combusting more than 73 megawatts (MW) (250 million British thermal units per hour (MMBtu/hr)) heat input of fossil fuel (either alone or in combination with any other fuel); and

(2) For which construction, modification, or reconstruction is commenced after September 18, 1978.

(b) An IGCC electric utility steam generating unit (both the stationary combustion turbine and any associated duct burners) is subject to this part and is not subject to subpart GG or KKKK of this part if both of the conditions specified in paragraphs (b)(1) and (2) of this section are met.

(1) The IGCC electric utility steam generating unit is capable of combusting more than 73 MW (250 MMBtu/h) heat input of fossil fuel (either alone or in combination with any other fuel) in the combustion turbine engine and associated heat recovery steam generator; and

(2) The IGCC electric utility steam generating unit commenced construction, modification, or reconstruction after February 28, 2005.

(c) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels, shall not bring that unit under the applicability of this subpart.

(d) Any change to an existing steam generating unit originally designed to fire gaseous or liquid fossil fuels, to accommodate the use of any other fuel (fossil or nonfossil) shall not bring that unit under the applicability of this subpart.

(e) Applicability of this subpart to an electric utility combined cycle gas turbine other than an IGCC electric utility steam generating unit is as specified in paragraphs (e)(1) through (3) of this section.

(1) Affected facilities (*i.e.* heat recovery steam generators used with duct burners) associated with a stationary combustion turbine that are capable of combusting more than 73 MW (250

MMBtu/h) heat input of fossil fuel are subject to this subpart except in cases when the affected facility (*i.e.* heat recovery steam generator) meets the applicability requirements of and is subject to subpart KKKK of this part.

(2) For heat recovery steam generators use with duct burners subject to this subpart, only emissions resulting from the combustion of fuels in the steam generating unit (*i.e.* duct burners) are subject to the standards under this subpart. (The emissions resulting from the combustion of fuels in the stationary combustion turbine engine are subject to subpart GG or KKKK, as applicable, of this part.)

(3) Any affected facility that meets the applicability requirements and is subject to subpart Eb or subpart CCCC of this part is not subject to the emission standards under subpart Da.

[72 FR 32722, June 13, 2007, as amended at 74 FR 5078, Jan. 28, 2009; 77 FR 9448, Feb. 16, 2012]

§ 60.41Da Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Anthracite means coal that is classified as anthracite according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17).

Available system capacity means the capacity determined by subtracting the system load and the system emergency reserves from the net system capacity.

Biomass means plant materials and animal waste.

Bituminous coal means coal that is classified as bituminous according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17).

Boiler operating day for units constructed, reconstructed, or modified before March 1, 2005, means a 24-hour period during which fossil fuel is combusted in a steam-generating unit for the entire 24 hours. For units constructed, reconstructed, or modified after February 28, 2005, *boiler operating day* means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the steam-generating unit. It is not necessary for fuel to be combusted the entire 24-hour period.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17) and coal refuse. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures are included in this definition for the purposes of this subpart.

Coal-fired electric utility steam generating unit means an electric utility steam generating unit that burns coal, coal refuse, or a synthetic gas derived from coal either exclusively, in any combination together, or in any combination with other fuels in any amount.

Coal refuse means waste products of coal mining, physical coal cleaning, and coal preparation operations (*e.g.* culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

Combined cycle gas turbine means a stationary turbine combustion system where heat from the turbine exhaust gases is recovered by a steam generating unit.

Combined heat and power, also known as ''cogeneration,'' means a steam-generating unit that simultaneously produces both electric (and mechanical) and useful thermal energy from the same primary energy source.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

Electric utility combined cycle gas turbine means any combined cycle gas turbine used for electric generation that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW net-electrical output to any utility power distribution system for sale. Any steam distribution system that is constructed for the purpose of providing steam to a steam electric generator that would produce electrical power for sale is also considered in determining the electrical energy output capacity of the affected facility.

Electric utility steam-generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW net-electrical output to any utility power distribution system for sale. Also, any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is considered in determining the electrical energy output capacity of the affected facility.

Electrostatic precipitator or *ESP* means an add-on air pollution control device used to capture particulate matter (PM) by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper.

Emission limitation means any emissions limit or operating limit.

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat.

Gaseous fuel means any fuel that is present as a gas at standard conditions and includes, but is not limited to, natural gas, refinery fuel gas, process gas, coke-oven gas, synthetic gas, and gasified coal.

Gross energy output means:

(1) For facilities constructed, reconstructed, or modified before May 4, 2011, the gross electrical or mechanical output from the affected facility plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.,* steam delivered to an industrial process);

(2) For facilities constructed, reconstructed, or modified after May 3, 2011, the gross electrical or mechanical output from the affected facility minus any electricity used to power the feedwater pumps and any associated gas compressors (air separation unit main compressor, oxygen compressor, and nitrogen compressor) plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.,* steam delivered to an industrial process);

(3) For combined heat and power facilities constructed, reconstructed, or modified after May 3, 2011, the gross electrical or mechanical output from the affected facility divided by 0.95 minus any electricity used to power the feedwater pumps and any associated gas compressors (air separation unit main compressor, oxygen compressor, and nitrogen compressor) plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.,* steam delivered to an industrial process);

(4) For a IGCC electric utility generating unit that coproduces chemicals constructed, reconstructed, or modified after May 3, 2011, the gross useful work performed is the gross electrical or mechanical output from the unit minus electricity used to power the feedwater pumps and any associated gas compressors (air separation unit main compressor, oxygen compressor, and nitrogen compressor) that are associated with power production plus 75 percent

of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.*, steam delivered to an industrial process). Auxiliary loads that are associated with power production are determined based on the energy in the coproduced chemicals compared to the energy of the syngas combusted in combustion turbine engine and associated duct burners.

24-hour period means the period of time between 12:01 a.m. and 12:00 midnight.

Integrated gasification combined cycle electric utility steam generating unit or *IGCC electric utility steam generating unit* means an electric utility combined cycle gas turbine that is designed to burn fuels containing 50 percent (by heat input) or more solid-derived fuel not meeting the definition of natural gas. The Administrator may waive the 50 percent solid-derived fuel requirement during periods of the gasification system construction, startup and commissioning, shutdown, or repair. No solid fuel is directly burned in the unit during operation.

ISO conditions means a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals.

Lignite means coal that is classified as lignite A or B according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17).

Natural gas means a fluid mixture of hydrocarbons (e.g., methane, ethane, or propane), composed of at least 70 percent methane by volume or that has a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot), that maintains a gaseous state under ISO conditions. In addition, *natural gas* contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Finally, natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Neighboring company means any one of those electric utility companies with one or more electric power interconnections to the principal company and which have geographically adjoining service areas.

Net-electric output means the gross electric sales to the utility power distribution system minus purchased power on a calendar year basis.

Net energy output means the gross energy output minus the parasitic load associated with power production. Parasitic load includes, but is not limited to, the power required to operate the equipment used for fuel delivery systems, air pollution control systems, wastewater treatment systems, ash handling and disposal systems, and other controls (*i.e.*, pumps, fans, compressors, motors, instrumentation, and other ancillary equipment required to operate the affected facility).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Out-of-control period means any period beginning with the quadrant corresponding to the completion of a daily calibration error, linearity check, or quality assurance audit that indicates that the instrument is not measuring and recording within the applicable performance specifications and ending with the quadrant corresponding to the completion of an additional calibration error, linearity check, or quality assurance audit following corrective action that demonstrates that the instrument is measuring and recording within the applicable performance specifications.

Petroleum for facilities constructed, reconstructed, or modified before May 4, 2011, means crude oil or a fuel derived from crude oil, including, but not limited to, distillate oil, and residual oil. For units constructed, reconstructed, or modified after May 3, 2011, *petroleum* means crude oil or a fuel derived from crude oil, including, but not limited to, distillate oil, residual oil, and petroleum coke.

Petroleum coke, also known as ''petcoke,'' means a carbonization product of high-boiling hydrocarbon fractions obtained in petroleum processing (heavy residues). *Petroleum coke*

is typically derived from oil refinery coker units or other cracking processes.

Potential combustion concentration means the theoretical emissions (nanograms per joule (ng/J), lb/MMBtu heat input) that would result from combustion of a fuel in an uncleaned state without emission control systems. For sulfur dioxide (SO_2) the potential combustion concentration is determined under §60.50Da(c).

Potential electrical output capacity means 33 percent of the maximum design heat input capacity of the steam generating unit, divided by 3,413 Btu/KWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr (*e.g.*, a steam generating unit with a 100 MW (340 MMBtu/hr) fossil-fuel heat input capacity would have a 289,080 MWh 12 month potential electrical output capacity). For electric utility combined cycle gas turbines the potential electrical output capacity is determined on the basis of the fossil-fuel firing capacity of the steam generator exclusive of the heat input and electrical power contribution by the gas turbine.

Resource recovery unit means a facility that combusts more than 75 percent non-fossil fuel on a quarterly (calendar) heat input basis.

Solid-derived fuel means any solid, liquid, or gaseous fuel derived from solid fuel for the purpose of creating useful heat and includes, but is not limited to, solvent refined coal, liquified coal, synthetic gas, gasified coal, gasified petroleum coke, gasified biomass, and gasified tire derived fuel.

Steam generating unit for facilities constructed, reconstructed, or modified before May 4, 2011, means any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam (including fossil-fuel-fired steam generators associated with combined cycle gas turbines; nuclear steam generators are not included). For units constructed, reconstructed, or modified after May 3, 2011, *steam generating unit* means any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam (including fossil-fuel-fired steam generators associated with combined cycle gas turbines; nuclear steam generators are not included) plus any integrated combustion turbines and fuel cells.

Subbituminous coal means coal that is classified as subbituminous A, B, or C according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17).

Wet flue gas desulfurization technology or *wet FGD* means a SO_2 control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet FGD technology include, but are not limited to, lime, limestone, and sodium.

[72 FR 32722, June 13, 2007, as amended at 74 FR 5079, Jan. 28, 2009; 77 FR 9448, Feb. 16, 2012; 77 FR 23402, Apr. 19, 2012; 78 FR 24082, Apr. 24, 2013]

§60.42Da Standards for particulate matter (PM).

(a) Except as provided in paragraph (f) of this section, on and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, an owner or operator of an affected facility shall not cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction, or modification commenced before March 1, 2005, any gases that contain PM in excess of 13 ng/J (0.03 lb/MMBtu) heat input.

(b) Except as provided in paragraphs (b)(1) and (b)(2) of this section, on and after the date the initial PM performance test is completed or required to be completed under §60.8, whichever date comes first, an owner or operator of an affected facility shall not cause to be discharged into the atmosphere any gases which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(1) An owner or operator of an affected facility that elects to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions

according to the requirements of this subpart is exempt from the opacity standard specified in this paragraph (b) of this section.

(2) An owner or operator of an affected facility that combusts only natural gas and/or synthetic natural gas that chemically meets the definition of natural gas is exempt from the opacity standard specified in paragraph (b) of this section.

(c) Except as provided in paragraphs (d) and (f) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005, but before May 4, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of either:

(1) 18 ng/J (0.14 lb/MWh) gross energy output; or

(2) 6.4 ng/J (0.015 lb/MMBtu) heat input derived from the combustion of solid, liquid, or gaseous fuel.

(d) As an alternative to meeting the requirements of paragraph (c) of this section, the owner or operator of an affected facility for which construction, reconstruction, or modification commenced after February 28, 2005, but before May 4, 2011, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of:

(1) 13 ng/J (0.030 lb/MMBtu) heat input derived from the combustion of solid, liquid, or gaseous fuel, and

(2) For an affected facility that commenced construction or reconstruction, 0.1 percent of the combustion concentration determined according to the procedure in § 60.48Da(o)(5) (99.9 percent reduction) when combusting solid, liquid, or gaseous fuel, or

(3) For an affected facility that commenced modification, 0.2 percent of the combustion concentration determined according to the procedure in § 60.48Da(o)(5) (99.8 percent reduction) when combusting solid, liquid, or gaseous fuel.

(e) Except as provided in paragraph (f) of this section, the owner or operator of an affected facility that commenced construction, reconstruction, or modification commenced after May 3, 2011, shall meet the requirements specified in paragraphs (e)(1) and (2) of this section.

(1) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator shall not cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the applicable emissions limit specified in paragraphs (e)(1)(i) or (ii) of this section.

(i) For an affected facility which commenced construction or reconstruction:

(A) 11 ng/J (0.090 lb/MWh) gross energy output; or

(B) 12 ng/J (0.097 lb/MWh) net energy output.

(ii) For an affected facility which commenced modification, the emission limits specified in paragraphs (c) or (d) of this section.

(2) During periods of startup and shutdown, the owner or operator shall meet the work practice standards specified in Table 3 to subpart UUUUU of part 63.

(f) An owner or operator of an affected facility that meets the conditions in either paragraphs (f)(1) or (2) of this section is exempt from the PM emissions limits in this section.

(1) The affected facility combusts only gaseous or liquid fuels (excluding residual oil) with potential SO_2 emissions rates of 26 ng/J (0.060 lb/MMBtu) or less, and that does not use a post-combustion technology to reduce emissions of SO_2 or PM.

(2) The affected facility is operated under a PM commercial demonstration permit issued by the Administrator according to the provisions of § 60.47Da.

[77 FR 9450, Feb. 16, 2012, as amended at 78 FR 24083, Apr. 24, 2013]

§60.43Da Standards for sulfur dioxide (SO_2).

(a) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts solid fuel or solid-derived fuel and for which construction, reconstruction, or modification commenced before or on February 28, 2005, except as provided under paragraphs (c), (d), (f) or (h) of this section, any gases that contain SO_2 in excess of:

(1) 520 ng/J (1.20 lb/MMBtu) heat input and 10 percent of the potential combustion concentration (90 percent reduction);

(2) 30 percent of the potential combustion concentration (70 percent reduction), when emissions are less than 260 ng/J (0.60 lb/MMBtu) heat input;

(3) 180 ng/J (1.4 lb/MWh) gross energy output; or

(4) 65 ng/J (0.15 lb/MMBtu) heat input.

(b) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts liquid or gaseous fuels (except for liquid or gaseous fuels derived from solid fuels and as provided under paragraphs (e) or (h) of this section) and for which construction, reconstruction, or modification commenced before or on February 28, 2005, any gases that contain SO_2 in excess of:

(1) 340 ng/J (0.80 lb/MMBtu) heat input and 10 percent of the potential combustion concentration (90 percent reduction); or

(2) 100 percent of the potential combustion concentration (zero percent reduction) when emissions are less than 86 ng/J (0.20 lb/MMBtu) heat input.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts solid solvent refined coal (SRC–I) any gases that contain SO_2 in excess of 520 ng/J (1.20 lb/MMBtu) heat input and 15 percent of the potential combustion concentration (85 percent reduction) except as provided under paragraph (f) of this section; compliance with the emission limitation is determined on a 30-day rolling average basis and compliance with the percent reduction requirement is determined on a 24-hour basis.

(d) Sulfur dioxide emissions are limited to 520 ng/J (1.20 lb/MMBtu) heat input from any affected facility which:

(1) Combusts 100 percent anthracite;

(2) Is classified as a resource recovery unit; or

(3) Is located in a noncontinental area and combusts solid fuel or solid-derived fuel.

(e) Sulfur dioxide emissions are limited to 340 ng/J (0.80 lb/MMBtu) heat input from any affected facility which is located in a noncontinental area and combusts liquid or gaseous fuels (excluding solid-derived fuels).

(f) The SO_2 standards under this section do not apply to an owner or operator of an affected facility that is operated under an SO_2 commercial demonstration permit issued by the Administrator in accordance with the provisions of §60.47Da.

(g) Compliance with the emission limitation and percent reduction requirements under this section are both determined on a 30-day rolling average basis except as provided under paragraph (c) of this section.

(h) When different fuels are combusted simultaneously, the applicable standard is determined by proration using the following formula:

(1) If emissions of SO_2 to the atmosphere are greater than 260 ng/J (0.60 lb/MMBtu) heat input

$$E_s = \frac{(340x + 520y)}{100} \quad \text{and} \quad \%P_s = 10$$

(2) If emissions of SO_2 to the atmosphere are equal to or less than 260 ng/J (0.60 lb/MMBtu) heat input:

$$E_s = \frac{(340x + 520y)}{100} \quad \text{and} \quad \%P_s = \frac{(10x + 30y)}{100}$$

Where:

E_s = Prorated SO_2 emission limit (ng/J heat input);

$\%P_s$ = Percentage of potential SO_2 emission allowed;

x = Percentage of total heat input derived from the combustion of liquid or gaseous fuels (excluding solid-derived fuels); and

y = Percentage of total heat input derived from the combustion of solid fuel (including solid-derived fuels).

(i) Except as provided in paragraphs (j) and (k) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility for which construction, reconstruction, or modification commenced after February 28, 2005, but before May 4, 2011, shall cause to be discharged into the atmosphere from that affected facility, any gases that contain SO_2 in excess of the applicable emissions limit specified in paragraphs (i)(1) through (3) of this section.

(1) For an affected facility which commenced construction, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output; or

(ii) 5 percent of the potential combustion concentration (95 percent reduction).

(2) For an affected facility which commenced reconstruction, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output;

(ii) 65 ng/J (0.15 lb/MMBtu) heat input; or

(iii) 5 percent of the potential combustion concentration (95 percent reduction).

(3) For an affected facility which commenced modification, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output;

(ii) 65 ng/J (0.15 lb/MMBtu) heat input; or

(iii) 10 percent of the potential combustion concentration (90 percent reduction).

(j) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification commenced after February 28, 2005, and that burns 75 percent or more (by heat input) coal refuse on a 12-month rolling average basis, shall caused to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the applicable emission limitation specified in paragraphs (j)(1) through (3) of this section.

(1) For an affected facility for which construction commenced after February 28, 2005, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis; or

(ii) 6 percent of the potential combustion concentration (94 percent reduction) on a 30-day rolling average basis.

(2) For an affected facility for which reconstruction commenced after February 28, 2005, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis;

(ii) 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis; or

(iii) 6 percent of the potential combustion concentration (94 percent reduction) on a 30-day rolling average basis.

(3) For an affected facility for which modification commenced after February 28, 2005, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output on a 30-day rolling average basis;

(ii) 65 ng/J (0.15 lb/MMBtu) heat input on a 30-day rolling average basis; or

(iii) 10 percent of the potential combustion concentration (90 percent reduction) on a 30-day rolling average basis.

(k) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility located in a noncontinental area for which construction, reconstruction, or modification commenced after February 28, 2005, but before May 4, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the applicable emissions limit specified in paragraphs (k)(1) and (2) of this section.

(1) For an affected facility that burns solid or solid-derived fuel, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input.

(2) For an affected facility that burns other than solid or solid-derived fuel, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 230 ng/J (0.54 lb/MMBtu) heat input.

(l) Except as provided in paragraphs (j) and (m) of this section, on and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility for which construction, reconstruction, or modification commenced after May 3, 2011, shall cause to be discharged into the atmosphere from that affected facility, any gases that contain SO_2 in excess of the applicable emissions limit specified in paragraphs (l)(1) and (2) of this section.

(1) For an affected facility which commenced construction or reconstruction, any gases that contain SO_2 in excess of either:

(i) 130 ng/J (1.0 lb/MWh) gross energy output; or

(ii) 140 ng/J (1.2 lb/MWh) net energy output; or

(iii) 3 percent of the potential combustion concentration (97 percent reduction).

(2) For an affected facility which commenced modification, any gases that contain SO_2 in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output; or

(ii) 10 percent of the potential combustion concentration (90 percent reduction).

(m) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility located in a noncontinental area for which construction, reconstruction, or modification commenced after May 3, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the applicable emissions limit specified in paragraphs (m)(1) and (2) of this section.

(1) For an affected facility that burns solid or solid-derived fuel, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input.

(2) For an affected facility that burns other than solid or solid-derived fuel, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 230 ng/J (0.54 lb/MMBtu) heat input.

[72 FR 32722, June 13, 2007, as amended at 77 FR 9450, Feb. 16, 2012]

§60.44Da Standards for nitrogen oxides (NO_X).

(a) Except as provided in paragraph (h) of this section, on and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility for which construction, reconstruction, or modification commenced before July 10, 1997 any gases that contain NO_X (expressed as NO_2) in excess of the applicable emissions limit in paragraphs (a)(1) and (2) of this section.

(1) The owner or operator shall not cause to be discharged into the atmosphere any gases that contain NO_X in excess of the emissions limit listed in the following table as applicable to the fuel type combusted and as determined on a 30-boiler operating day rolling average basis.

Fuel type	Emission limit for heat input	
	ng/J	lb/MMBtu
Gaseous fuels:		
Coal-derived fuels	210	0.50
All other fuels	86	0.20
Liquid fuels:		
Coal-derived fuels	210	0.50
Shale oil	210	0.50
All other fuels	130	0.30
Solid fuels:		
Coal-derived fuels	210	0.50
Any fuel containing more than 25%, by weight, coal refuse	(1)	(1)
Any fuel containing more than 25%, by weight, lignite if the lignite is mined in North Dakota, South Dakota, or Montana, and is combusted in a slag tap furnace [2]	340	0.80
Any fuel containing more than 25%, by weight, lignite not subject to the 340 ng/J heat input emission limit [2]	260	0.60
Subbituminous coal	210	0.50
Bituminous coal	260	0.60
Anthracite coal	260	0.60
All other fuels	260	0.60

[1] Exempt from NO_X standards and NO_X monitoring requirements.
[2] Any fuel containing less than 25%, by weight, lignite is not prorated but its percentage is added to the percentage of the predominant fuel.

(2) When two or more fuels are combusted simultaneously in an affected facility, the applicable emissions limit (E_n) is determined by proration using the following formula:

$$En = \frac{(86w + 130x + 210y + 260z + 340v)}{100}$$

Where:

En = Applicable NO_X emissions limit when multiple fuels are combusted simultaneously (ng/J heat input);

w = Percentage of total heat input derived from the combustion of fuels subject to the 86 ng/J heat input standard;

x = Percentage of total heat input derived from the combustion of fuels subject to the 130 ng/J heat input standard;

y = Percentage of total heat input derived from the combustion of fuels subject to the 210 ng/J heat input standard;

z = Percentage of total heat input derived from the combustion of fuels subject to the 260 ng/J heat input standard; and

v = Percentage of total heat input delivered from the combustion of fuels subject to the 340 ng/J heat input standard.

(b)–(c) [Reserved]

(d) Except as provided in paragraph (h) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after July 9, 1997, but before March 1, 2005, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X (expressed as NO_2) in excess of the applicable emissions limit specified in paragraphs (d)(1) and (2) of this section as determined on a 30-boiler operating day rolling average basis.

(1) For an affected facility which commenced construction, any gases that contain NO_X in excess of 200 ng/J (1.6 lb/MWh) gross energy output.

(2) For an affected facility which commenced reconstruction, any gases that contain NO_X in excess of 65 ng/J (0.15 lb/MMBtu) heat input.

(e) Except as provided in paragraphs (f) and (h) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005 but before

May 4, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X (expressed as NO_2) in excess of the applicable emissions limit specified in paragraphs (e)(1) through (3) of this section as determined on a 30-boiler operating day rolling average basis.

(1) For an affected facility which commenced construction, any gases that contain NO_X in excess of 130 ng/J (1.0 lb/MWh) gross energy output.

(2) For an affected facility which commenced reconstruction, any gases that contain NO_X in excess of either:

(i) 130 ng/J (1.0 lb/MWh) gross energy output; or

(ii) 47 ng/J (0.11 lb/MMBtu) heat input.

(3) For an affected facility which commenced modification, any gases that contain NO_X in excess of either:

(i) 180 ng/J (1.4 lb/MWh) gross energy output; or

(ii) 65 ng/J (0.15 lb/MMBtu) heat input.

(f) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an IGCC electric utility steam generating unit subject to the provisions of this subpart and for which construction, reconstruction, or modification commenced after February 28, 2005 but before May 4, 2011, shall meet the requirements specified in paragraphs (f)(1) through (3) of this section.

(1) Except as provided for in paragraphs (f)(2) and (3) of this section, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain NO_X (expressed as NO_2) in excess of 130 ng/J (1.0 lb/MWh) gross energy output.

(2) When burning liquid fuel exclusively or in combination with solid-derived fuel such that the liquid fuel contributes 50 percent or more of the total heat input to the combined cycle combustion turbine, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain NO_X (expressed as NO_2) in excess of 190 ng/J (1.5 lb/MWh) gross energy output.

(3) In cases when during a 30-boiler operating day rolling average compliance period liquid fuel is burned in such a manner to meet the conditions in paragraph (f)(2) of this section for only a portion of the clock hours in the 30-day compliance period, the owner or operator shall not cause to be discharged into the atmosphere any gases that contain NO_X (expressed as NO_2) in excess of the computed weighted-average emissions limit based on the proportion of gross energy output (in MWh) generated during the compliance period for each of emissions limits in paragraphs (f)(1) and (2) of this section.

(g) Except as provided in paragraphs (h) of this section and §60.45Da, on and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after May 3, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X (expressed as NO_2) in excess of the applicable emissions limit specified in paragraphs (g)(1) through (3) of this section.

(1) For an affected facility which commenced construction or reconstruction, any gases that contain NO_X in excess of either:

(i) 88 ng/J (0.70 lb/MWh) gross energy output; or

(ii) 95 ng/J (0.76 lb/MWh) net energy output.

(2) For an affected facility which commenced construction or reconstruction and that burns 75 percent or more coal refuse (by heat input) on a 12-month rolling average basis, any gases that contain NO_X in excess of either:

(i) 110 ng/J (0.85 lb/MWh) gross energy output; or

(ii) 120 ng/J (0.92 lb/MWh) net energy output.

(3) For an affected facility which commenced modification, any gases that contain NO_X in excess of 140 ng/J (1.1 lb/MWh) gross energy output.

(h) The NO_X emissions limits under this section do not apply to an owner or operator of an affected facility which is operating under a commercial demonstration permit issued by the Administrator in accordance with the provisions of §60.47Da.

[77 FR 9451, Feb. 16, 2012]

§ 60.45Da Alternative standards for combined nitrogen oxides (NO_X) and carbon monoxide (CO).

(a) The owner or operator of an affected facility that commenced construction, reconstruction, or modification after May 3, 2011 as alternate to meeting the applicable NO_X emissions limits specified in § 60.44Da may elect to meet the applicable standards for combined NO_X and CO specified in paragraph (b) of this section.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 no owner or operator of an affected facility that commenced construction, reconstruction, or modification after May 3, 2011, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X (expressed as NO_2) plus CO in excess of the applicable emissions limit specified in paragraphs (b)(1) through (3) of this section as determined on a 30-boiler operating day rolling average basis.

(1) For an affected facility which commenced construction or reconstruction, any gases that contain NO_X plus CO in excess of either:

(i) 140 ng/J (1.1 lb/MWh) gross energy output; or

(ii) 150 ng/J (1.2 lb/MWh) net energy output.

(2) For an affected facility which commenced construction or reconstruction and that burns 75 percent or more coal refuse (by heat input) on a 12-month rolling average basis, any gases that contain NO_X plus CO in excess of either:

(i) 160 ng/J (1.3 lb/MWh) gross energy output; or

(ii) 170 ng/J (1.4 lb/MWh) net energy output.

(3) For an affected facility which commenced modification, any gases that contain NO_X plus CO in excess of 190 ng/J (1.5 lb/MWh) gross energy output.

[77 FR 9453, Feb. 16, 2012]

§ 60.46Da [Reserved]

§ 60.47Da Commercial demonstration permit.

(a) An owner or operator of an affected facility proposing to demonstrate an emerging technology may apply to the Administrator for a commercial demonstration permit. The Administrator will issue a commercial demonstration permit in accordance with paragraph (e) of this section. Commercial demonstration permits may be issued only by the Administrator, and this authority will not be delegated.

(b) An owner or operator of an affected facility that combusts solid solvent refined coal (SRC–I) and who is issued a commercial demonstration permit by the Administrator is not subject to the SO_2 emission reduction requirements under § 60.43Da(c) but must, as a minimum, reduce SO_2 emissions to 20 percent of the potential combustion concentration (80 percent reduction) for each 24-hour period of steam generator operation and to less than 520 ng/J (1.20 lb/MMBtu) heat input on a 30-day rolling average basis.

(c) An owner or operator of an affected facility that uses fluidized bed combustion (atmospheric or pressurized) and who is issued a commercial demonstration permit by the Administrator is not subject to the SO_2 emission reduction requirements under § 60.43Da(a) but must, as a minimum, reduce SO_2 emissions to 15 percent of the potential combustion concentration (85 percent reduction) on a 30-day rolling average basis and to less than 520 ng/J (1.20 lb/MMBtu) heat input on a 30-day rolling average basis.

(d) The owner or operator of an affected facility that combusts coal-derived liquid fuel and who is issued a commercial demonstration permit by the Administrator is not subject to the applicable NO_X emission limitation and percent reduction under § 60.44Da(a) but must, as a minimum, reduce emissions to less than 300 ng/J (0.70 lb/MMBtu) heat input on a 30-day rolling average basis.

(e) Commercial demonstration permits may not exceed the following equivalent MW electrical generation capacity for any one technology category, and the total equivalent MW electrical generation capacity for all commercial demonstration plants may not exceed 15,000 MW.

Technology	Pollutant	Equivalent electrical capacity (MW electrical output)
Solid solvent refined coal (SCR I)	SO_2	6,000–10,000
Fluidized bed combustion (atmospheric)	SO_2	400–3,000
Fluidized bed combustion (pressurized)	SO_2	400–1,200
Coal liquification	NO_X	750–10,000
Total allowable for all technologies		15,000

(f) An owner or operator of an affected facility that uses a pressurized fluidized bed or a multi-pollutant emissions controls system who is issued a commercial demonstration permit by the Administrator is not subject to the total PM emission reduction requirements under §60.42Da but must, as a minimum, reduce PM emissions to less than 6.4 ng/J (0.015 lb/MMBtu) heat input.

(g) An owner or operator of an affected facility that uses a pressurized fluidized bed or a multi-pollutant emissions controls system who is issued a commercial demonstration permit by the Administrator is not subject to the SO_2 standards or emission reduction requirements under §60.43Da but must, as a minimum, reduce SO_2 emissions to 5 percent of the potential combustion concentration (95 percent reduction) or to less than 180 ng/J (1.4 lb/MWh) gross energy output on a 30-boiler operating day rolling average basis.

(h) An owner or operator of an affected facility that uses a pressurized fluidized bed or a multi-pollutant emissions control system or advanced combustion controls who is issued a commercial demonstration permit by the Administrator is not subject to the NO_X standards or emission reduction requirements under §60.44Da but must, as a minimum, reduce NO_X emissions to less than 130 ng/J (1.0 lb/MWh) or the combined NO_X plus CO emissions to less than 180 ng/J (1.4 lb/MWh) gross energy output on a 30-boiler operating day rolling average basis.

(i) Commercial demonstration permits may not exceed the following equivalent MW electrical generation capacity for any one technology category listed in the following table.

Technology	Pollutant	Equivalent electrical capacity (MW electrical output)
Multi-pollutant Emission Control	SO_2	1,000
Multi-pollutant Emission Control	NO_X	1,000
Multi-pollutant Emission Control	PM	1,000
Pressurized Fluidized Bed Combustion	SO_2	1,000
Pressurized Fluidized Bed Combustion	NO_X	1,000
Pressurized Fluidized Bed Combustion	PM	1,000
Advanced Combustion Controls	NO_X	1,000

[72 FR 32722, June 13, 2007, as amended at 77 FR 9450, Feb. 16, 2012]

§60.48Da Compliance provisions.

(a) For affected facilities for which construction, modification, or reconstruction commenced before May 4, 2011, the applicable PM emissions limit and opacity standard under §60.42Da, SO_2 emissions limit under §60.43Da, and NO_X emissions limit under §60.44Da apply at all times except during periods of startup, shutdown, or malfunction. For affected facilities for which construction, modification, or reconstruction commenced after May 3, 2011, the applicable SO_2 emissions limit under §60.43Da, NO_X emissions limit under §60.44Da, and NO_X plus CO emissions limit under §60.45Da apply at all times. The applicable PM emissions limit and opacity standard under §60.42Da apply at all times except during periods of startup and shutdown.

(b) After the initial performance test required under §60.8, compliance with the applicable SO_2 emissions limit and percentage reduction requirements under §60.43Da, NO_X emissions limit under §60.44Da, and NO_X plus CO emissions limit under §60.45Da is based on

the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30-boiler operating day rolling average emission rate for both SO_2, NO_X or NO_X plus CO as applicable, and a new percent reduction for SO_2 are calculated to demonstrate compliance with the standards.

(c) For the initial performance test required under § 60.8, compliance with the applicable SO_2 emissions limits and percentage reduction requirements under § 60.43Da, the NO_X emissions limits under § 60.44Da, and the NO_X plus CO emissions limits under § 60.45Da is based on the average emission rates for SO_2, NO_X, CO, and percent reduction for SO_2 for the first 30 successive boiler operating days. The initial performance test is the only test in which at least 30 days prior notice is required unless otherwise specified by the Administrator. The initial performance test is to be scheduled so that the first boiler operating day of the 30 successive boiler operating days is completed within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

(d) For affected facilities for which construction, modification, or reconstruction commenced before May 4, 2011, compliance with applicable 30-boiler operating day rolling average SO_2 and NO_X emissions limits is determined by calculating the arithmetic average of all hourly emission rates for SO_2 and NO_X for the 30 successive boiler operating days, except for data obtained during startup, shutdown, or malfunction. For affected facilities for which construction, modification, or reconstruction commenced after May 3, 2011, compliance with applicable 30-boiler operating day rolling average SO_2 and NO_X emissions limits is determined by dividing the sum of the SO_2 and NO_X emissions for the 30 successive boiler operating days by the sum of the gross energy output or net energy output, as applicable, for the 30 successive boiler operating days.

(e) For affected facilities for which construction, modification, or reconstruction commenced before May 4, 2011, compliance with applicable SO_2 percentage reduction requirements is determined based on the average inlet and outlet SO_2 emission rates for the 30 successive boiler operating days. For affected facilities for which construction, modification, or reconstruction commenced after May 3, 2011, compliance with applicable SO_2 percentage reduction requirements is determined based on the ''as fired'' total potential emissions and the total outlet SO_2 emissions for the 30 successive boiler operating days.

(f) For affected facilities for which construction, modification, or reconstruction commenced before May 4, 2011, compliance with the applicable daily average PM emissions limit is determined by calculating the arithmetic average of all hourly emission rates each boiler operating day, except for data obtained during startup, shutdown, or malfunction periods. Daily averages must be calculated for boiler operating days that have out-of-control periods totaling no more than 6 hours of unit operation during which the standard applies. For affected facilities for which construction or reconstruction commenced after May 3, 2011, that elect to demonstrate compliance using PM CEMS, compliance with the applicable PM emissions limit in § 60.42Da is determined on a 30-boiler operating day rolling average basis by calculating the arithmetic average of all hourly PM emission rates for the 30 successive boiler operating days, except for data obtained during periods of startup or shutdown.

(g) For affected facilities for which construction, modification, or reconstruction commenced after May 3, 2011, compliance with applicable 30-boiler operating day rolling average NO_X plus CO emissions limit is determined by dividing the sum of the NO_X plus CO emissions for the 30 successive boiler operating days by the sum of the gross energy output or net energy output, as applicable, for the 30 successive boiler operating days.

(h) If an owner or operator has not obtained the minimum quantity of emission data as required under § 60.49Da of this subpart, compliance of the affected facility with the emission

requirements under §§60.43Da and 60.44Da of this subpart for the day on which the 30-day period ends may be determined by the Administrator by following the applicable procedures in section 7 of Method 19 of appendix A of this part.

(i) *Compliance provisions for sources subject to §60.44Da(d)(1), (e)(1), (e)(2)(i), (e)(3)(i), (f), or (g).* The owner or operator shall calculate NO_X emissions as 1.194×10^{-7} lb/scf-ppm times the average hourly NO_X output concentration in ppm (measured according to the provisions of §60.49Da(c)), times the average hourly flow rate (measured in scfh, according to the provisions of §60.49Da(l) or §60.49Da(m)), divided by the average hourly gross energy output (measured according to the provisions of §60.49Da(k)) or the average hourly net energy output, as applicable. Alternatively, for oil-fired and gas-fired units, NO_X emissions may be calculated by multiplying the hourly NO_X emission rate in lb/MMBtu (measured by the CEMS required under §60.49Da(c) and (d)), by the hourly heat input rate (measured according to the provisions of §60.49Da(n)), and dividing the result by the average gross energy output (measured according to the provisions of §60.49Da(k)) or the average hourly net energy output, as applicable.

(j) *Compliance provisions for duct burners subject to §60.44Da(a)(1).* To determine compliance with the emissions limits for NO_X required by §60.44Da(a) for duct burners used in combined cycle systems, either of the procedures described in paragraph (j)(1) or (2) of this section may be used:

(1) The owner or operator of an affected duct burner shall conduct the performance test required under §60.8 using the appropriate methods in appendix A of this part. Compliance with the emissions limits under §60.44Da(a)(1) is determined on the average of three (nominal 1-hour) runs for the initial and subsequent performance tests. During the performance test, one sampling site shall be located in the exhaust of the turbine prior to the duct burner. A second sampling site shall be located at the outlet from the heat recovery steam generating unit. Measurements shall be taken at both sampling sites during the performance test; or

(2) The owner or operator of an affected duct burner may elect to determine compliance by using the CEMS specified under §60.49Da for measuring NO_X and oxygen (O_2) (or carbon dioxide (CO_2)) and meet the requirements of §60.49Da. Alternatively, data from a NO_X emission rate (*i.e.*, NO_X-diluent) CEMS certified according to the provisions of §75.20(c) of this chapter and appendix A to part 75 of this chapter, and meeting the quality assurance requirements of §75.21 of this chapter and appendix B to part 75 of this chapter, may be used, with the following caveats. Data used to meet the requirements of §60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter. The sampling site shall be located at the outlet from the steam generating unit. The NO_X emission rate at the outlet from the steam generating unit shall constitute the NO_X emission rate from the duct burner of the combined cycle system.

(k) *Compliance provisions for duct burners subject to §60.44Da(d)(1) or (e)(1).* To determine compliance with the emission limitation for NO_X required by §60.44Da(d)(1) or (e)(1) for duct burners used in combined cycle systems, either of the procedures described in paragraphs (k)(1) and (2) of this section may be used:

(1) The owner or operator of an affected duct burner used in combined cycle systems shall determine compliance with the applicable NO_X emission limitation in §60.44Da(d)(1) or (e)(1) as follows:

(i) The emission rate (E) of NO_X shall be computed using Equation 2 in this section:

$$E = \frac{(Csg \times Qsg) - (Cte \times Qte)}{(Osg \times h)} \quad \text{(Eq. 2)}$$

Where:

E = Emission rate of NO_X from the duct burner, ng/J (lb/MWh) gross energy output;

C_{sg} = Average hourly concentration of NO_X exiting the steam generating unit, ng/dscm (lb/dscf);

C_{te} = Average hourly concentration of NO_X in the turbine exhaust upstream from duct burner, ng/dscm (lb/dscf);

Q_{sg} = Average hourly volumetric flow rate of exhaust gas from steam generating unit, dscm/h (dscf/h);

Q_{te} = Average hourly volumetric flow rate of exhaust gas from combustion turbine, dscm/h (dscf/h);

O_{sg} = Average hourly gross energy output from steam generating unit, J/h (MW); and

h = Average hourly fraction of the total heat input to the steam generating unit derived from the combustion of fuel in the affected duct burner.

(ii) Method 7E of appendix A of this part shall be used to determine the NO_X concentrations (C_{sg} and C_{te}). Method 2, 2F or 2G of appendix A of this part, as appropriate, shall be used to determine the volumetric flow rates (Q_{sg} and Q_{te}) of the exhaust gases. The volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(iii) The owner or operator shall develop, demonstrate, and provide information satisfactory to the Administrator to determine the average hourly gross energy output from the steam generating unit, and the average hourly percentage of the total heat input to the steam generating unit derived from the combustion of fuel in the affected duct burner.

(iv) Compliance with the applicable NO_X emission limitation in § 60.44Da(d)(1) or (e)(1) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests.

(2) The owner or operator of an affected duct burner used in a combined cycle system may elect to determine compliance with the applicable NO_X emission limitation in § 60.44Da(d)(1) or (e)(1) on a 30-day rolling average basis as indicated in paragraphs (k)(2)(i) through (iv) of this section.

(i) The emission rate (E) of NO_X shall be computed using Equation 3 in this section:

$$E = \frac{(Csg \times Qsg)}{Occ} \quad \text{(Eq. 3)}$$

Where:

E = Emission rate of NO_X from the duct burner, ng/J (lb/MWh) gross energy output;

C_{sg} = Average hourly concentration of NO_X exiting the steam generating unit, ng/dscm (lb/dscf);

Q_{sg} = Average hourly volumetric flow rate of exhaust gas from steam generating unit, dscm/h (dscf/h); and

O_{cc} = Average hourly gross energy output from entire combined cycle unit, J/h (MW).

(ii) The CEMS specified under § 60.49Da for measuring NO_X and O_2 (or CO_2) shall be used to determine the average hourly NO_X concentrations (C_{sg}). The continuous flow monitoring system specified in § 60.49Da(l) or § 60.49Da(m) shall be used to determine the volumetric flow rate (Q_{sg}) of the exhaust gas. If the option to use the flow monitoring system in § 60.49Da(m) is selected, the flow rate data used to meet the requirements of § 60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter. The sampling site shall be located at the outlet from the steam generating unit.

(iii) The continuous monitoring system specified under §60.49Da(k) for measuring and determining gross energy output shall be used to determine the average hourly gross energy output from the entire combined cycle unit (O_{cc}), which is the combined output from the combustion turbine and the steam generating unit.

(iv) The owner or operator may, in lieu of installing, operating, and recording data from the continuous flow monitoring system specified in §60.49Da(l), determine the mass rate (lb/h) of NO_X emissions by installing, operating, and maintaining continuous fuel flowmeters following the appropriate measurements procedures specified in appendix D of part 75 of this chapter. If this compliance option is selected, the emission rate (E) of NO_X shall be computed using Equation 4 in this section:

$$E = \frac{(ER_{sg} \times H_{cc})}{O_{cc}} \qquad \text{(Eq. 4)}$$

Where:

E = Emission rate of NO_X from the duct burner, ng/J (lb/MWh) gross energy output;

ER_{sg} = Average hourly emission rate of NO_X exiting the steam generating unit heat input calculated using appropriate F factor as described in Method 19 of appendix A of this part, ng/J (lb/MMBtu);

H_{cc} = Average hourly heat input rate of entire combined cycle unit, J/h (MMBtu/h); and

O_{cc} = Average hourly gross energy output from entire combined cycle unit, J/h (MW).

(3) When an affected duct burner steam generating unit utilizes a common steam turbine with one or more affected duct burner steam generating units, the owner or operator shall either:

(i) Determine compliance with the applicable NO_X emissions limits by measuring the emissions combined with the emissions from the other unit(s) utilizing the common steam turbine; or

(ii) Develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the steam turbine for each of the affected duct burners. The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of emissions regulated under this part.

(l) [Reserved]

(m) Compliance provisions for sources subject to §60.43Da(i)(1)(i), (i)(2)(i), (i)(3)(i), (j)(1)(i), (j)(2)(i), (j)(3)(i), (l)(1)(i), (l)(1)(ii), or (l)(2). The owner or operator shall calculate SO_2 emissions as 1.660×10^{-7} lb/scf-ppm times the average hourly SO_2 output concentration in ppm (measured according to the provisions of §60.49Da(b)), times the average hourly flow rate (measured according to the provisions of §60.49Da(l) or §60.49Da(m)), divided by the average hourly gross energy output (measured according to the provisions of §60.49Da(k)) or the average hourly net energy output, as applicable. Alternatively, for oil-fired and gas-fired units, SO_2 emissions may be calculated by multiplying the hourly SO_2 emission rate (in lb/MMBtu), measured by the CEMS required under §60.49Da, by the hourly heat input rate (measured according to the provisions of §60.49Da(n)), and dividing the result by the average gross energy output (measured according to the provisions of §60.49Da(k)) or the average hourly net energy output, as applicable.

(n) Compliance provisions for sources subject to §60.42Da(c)(1) or (e)(1)(i). The owner or operator shall calculate PM emissions by multiplying the average hourly PM output concentration (measured according to the provisions of §60.49Da(t)), by the average hourly flow rate (measured according to the provisions of §60.49Da(l) or

§ 60.49Da(m)), and dividing by the average hourly gross energy output (measured according to the provisions of § 60.49Da(k)) or the average hourly net energy output, as applicable.

(o) Compliance provisions for sources subject to § 60.42Da(c)(2), (d), or (e)(1)(ii). Except as provided for in paragraph (p) of this section, the owner or operator must demonstrate compliance with each applicable emissions limit according to the requirements in paragraphs (o)(1) through (o)(5) of this section.

(1) You must conduct a performance test to demonstrate initial compliance with the applicable PM emissions limit in § 60.42Da by the applicable date specified in § 60.8(a). Thereafter, you must conduct each subsequent performance test within 12 calendar months following the date the previous performance test was required to be conducted. You must conduct each performance test according to the requirements in § 60.8 using the test methods and procedures in § 60.50Da. The owner or operator of an affected facility that has not operated for 60 consecutive calendar days prior to the date that the subsequent performance test would have been required had the unit been operating is not required to perform the subsequent performance test until 30 calendar days after the next boiler operating day. Requests for additional 30 day extensions shall be granted by the relevant air division or office director of the appropriate Regional Office of the U.S. EPA.

(2) You must monitor the performance of each electrostatic precipitator or fabric filter (baghouse) operated to comply with the applicable PM emissions limit in § 60.42Da using a continuous opacity monitoring system (COMS) according to the requirements in paragraphs (o)(2)(i) through (vi) unless you elect to comply with one of the alternatives provided in paragraphs (o)(3) and (o)(4) of this section, as applicable to your control device.

(i) Each COMS must meet Performance Specification 1 in 40 CFR part 60, appendix B.

(ii) You must comply with the quality assurance requirements in paragraphs (o)(2)(ii)(A) through (E) of this section.

(A) You must automatically (intrinsic to the opacity monitor) check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of Performance Specification 1 in 40 CFR part 60, appendix B.

(B) You must adjust the zero and span whenever the 24-hour zero drift or 24-hour span drift exceeds 4 percent opacity. The COMS must allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. The optical surfaces exposed to the effluent gases must be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. For systems using automatic zero adjustments, the optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(C) You must apply a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. All procedures applied must provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(D) Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS must be in continuous operation and must 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.

(E) You must reduce all data from the COMS to 6-minute averages. Six-minute opacity averages must be calculated from 36 or more data points equally spaced over each 6-minute period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments must not be included in the data averages. An arithmetic or integrated average of all data may be used.

(iii) During each performance test conducted according to paragraph

(o)(1) of this section, you must establish an opacity baseline level. The value of the opacity baseline level is determined by averaging all of the 6-minute average opacity values (reported to the nearest 0.1 percent opacity) from the COMS measurements recorded during each of the test run intervals conducted for the performance test, and then adding 2.5 percent opacity to your calculated average opacity value for all of the test runs. If your opacity baseline level is less than 5.0 percent, then the opacity baseline level is set at 5.0 percent.

(iv) You must evaluate the preceding 24-hour average opacity level measured by the COMS each boiler operating day excluding periods of affected facility startup, shutdown, or malfunction. If the measured 24-hour average opacity emission level is greater than the baseline opacity level determined in paragraph (o)(2)(iii) of this section, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high opacity incident and take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the measured 24-hour average opacity to a level below the baseline opacity level. In cases when a wet scrubber is used in combination with another PM control device that serves as the primary PM control device, the wet scrubber must be maintained and operated.

(v) You must record the opacity measurements, calculations performed, and any corrective actions taken. The record of corrective action taken must include the date and time during which the measured 24-hour average opacity was greater than baseline opacity level, and the date, time, and description of the corrective action.

(vi) If the measured 24-hour average opacity for your affected facility remains at a level greater than the opacity baseline level after 7 boiler operating days, then you must conduct a new PM performance test according to paragraph (o)(1) of this section and establish a new opacity baseline value according to paragraph (o)(2) of this section. This new performance test must be conducted within 60 days of the date that the measured 24-hour average opacity was first determined to exceed the baseline opacity level unless a waiver is granted by the permitting authority.

(3) As an alternative to complying with the requirements of paragraph (o)(2) of this section, an owner or operator may elect to monitor the performance of an electrostatic precipitator (ESP) operated to comply with the applicable PM emissions limit in §60.42Da using an ESP predictive model developed in accordance with the requirements in paragraphs (o)(3)(i) through (v) of this section.

(i) You must calibrate the ESP predictive model with each PM control device used to comply with the applicable PM emissions limit in §60.42Da operating under normal conditions. In cases when a wet scrubber is used in combination with an ESP to comply with the PM emissions limit, the wet scrubber must be maintained and operated.

(ii) You must develop a site-specific monitoring plan that includes a description of the ESP predictive model used, the model input parameters, and the procedures and criteria for establishing monitoring parameter baseline levels indicative of compliance with the PM emissions limit. You must submit the site-specific monitoring plan for approval by the permitting authority. For reference purposes in preparing the monitoring plan, see the OAQPS ''Compliance Assurance Monitoring (CAM) Protocol for an Electrostatic Precipitator (ESP) Controlling Particulate Matter (PM) Emissions from a Coal-Fired Boiler.'' This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality Planning and Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Continuous Emission Monitoring.

(iii) You must run the ESP predictive model using the applicable input data each boiler operating day and evaluate the model output for the preceding boiler operating day excluding periods of affected facility startup, shutdown, or malfunction. If the values for one or

more of the model parameters exceed the applicable baseline levels determined according to your approved site-specific monitoring plan, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of a model parameter deviation and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to return the model output to within the applicable baseline levels.

(iv) You must record the ESP predictive model inputs and outputs and any corrective actions taken. The record of corrective action taken must include the date and time during which the model output values exceeded the applicable baseline levels, and the date, time, and description of the corrective action.

(v) If after 7 consecutive days a model parameter continues to exceed the applicable baseline level, then you must conduct a new PM performance test according to paragraph (o)(1) of this section. This new performance test must be conducted within 60 calendar days of the date that the model parameter was first determined to exceed its baseline level unless a waiver is granted by the permitting authority.

(4) As an alternative to complying with the requirements of paragraph (o)(2) of this section, an owner or operator may elect to monitor the performance of a fabric filter (baghouse) operated to comply with the applicable PM emissions limit in § 60.42Da by using a bag leak detection system according to the requirements in paragraphs (o)(4)(i) through (v) of this section.

(i) Each bag leak detection system must meet the specifications and requirements in paragraphs (o)(4)(i)(A) through (H) of this section.

(A) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per actual cubic meter (0.00044 grains per actual cubic foot) or less.

(B) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator must continuously record the output from the bag leak detection system using electronic or other means (*e.g.*, using a strip chart recorder or a data logger.)

(C) The bag leak detection system must be equipped with an alarm system that will react when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (o)(4)(i)(D) of this section, and the alarm must be located such that it can be noticed by the appropriate plant personnel.

(D) In the initial adjustment of the bag leak detection system, you must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(E) Following initial adjustment, you must not adjust the averaging period, alarm set point, or alarm delay time without approval from the permitting authority except as provided in paragraph (d)(1)(vi) of this section.

(F) Once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (o)(4)(ii) of this section.

(G) You must install the bag leak detection sensor downstream of the fabric filter and upstream of any wet scrubber.

(H) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(ii) You must develop and submit to the permitting authority for approval a site-specific monitoring plan for each bag leak detection system. You must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (o)(4)(ii)(A) through (F) of this section.

(A) Installation of the bag leak detection system;

(B) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(C) Operation of the bag leak detection system, including quality assurance procedures;

(D) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(E) How the bag leak detection system output will be recorded and stored; and

(F) Corrective action procedures as specified in paragraph (o)(4)(iii) of this section. In approving the site-specific monitoring plan, the permitting authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(iii) For each bag leak detection system, you must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (o)(4)(ii)(F) of this section, you must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(A) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate emissions;

(B) Sealing off defective bags or filter media;

(C) Replacing defective bags or filter media or otherwise repairing the control device;

(D) Sealing off a defective fabric filter compartment;

(E) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(F) Shutting down the process producing the particulate emissions.

(iv) You must maintain records of the information specified in paragraphs (o)(4)(iv)(A) through (C) of this section for each bag leak detection system.

(A) Records of the bag leak detection system output;

(B) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(C) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, if procedures were initiated within 1 hour of the alarm, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and if the alarm was alleviated within 3 hours of the alarm.

(v) If after any period composed of 30 boiler operating days during which the alarm rate exceeds 5 percent of the process operating time (excluding control device or process startup, shutdown, and malfunction), then you must conduct a new PM performance test according to paragraph (o)(1) of this section. This new performance test must be conducted within 60 calendar days of the date that the alarm rate was first determined to exceed 5 percent limit unless a waiver is granted by the permitting authority.

(5) An owner or operator of a modified affected facility electing to meet the emission limitations in §60.42Da(d) shall determine the percent reduction in PM by using the emission rate for PM determined by the performance test conducted according to the requirements in paragraph (o)(1) of this section and the ash content on a mass basis of the fuel burned during each performance test run as determined by analysis of the fuel as fired.

(p) As an alternative to meeting the compliance provisions specified in paragraph (o) of this section, an owner or operator may elect to install, evaluate, maintain, and operate a CEMS measuring PM emissions discharged from the affected facility to the atmosphere and record the output of the system as specified in paragraphs (p)(1) through (p)(8) of this section.

(1) The owner or operator shall submit a written notification to the Administrator of intent to demonstrate compliance with this subpart by using

a CEMS measuring PM. This notification shall be sent at least 30 calendar days before the initial startup of the monitor for compliance determination purposes. The owner or operator may discontinue operation of the monitor and instead return to demonstration of compliance with this subpart according to the requirements in paragraph (o) of this section by submitting written notification to the Administrator of such intent at least 30 calendar days before shutdown of the monitor for compliance determination purposes.

(2) Each CEMS shall be installed, evaluated, operated, and maintained according to the requirements in § 60.49Da(v).

(3) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of the date of notification to the Administrator required under paragraph (p)(1) of this section, whichever is later.

(4) Compliance with the applicable emissions limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emissions concentrations using the continuous monitoring system outlet data. The 24-hour block arithmetic average emission concentration shall be calculated using EPA Reference Method 19 of appendix A of this part, section 4.1.

(5) At a minimum, non-out-of-control CEMS hourly averages shall be obtained for 75 percent of all operating hours on a 30-boiler operating day rolling average basis. Beginning on January 1, 2012, non-out-of-control CEMS hourly averages shall be obtained for 90 percent of all operating hours on a 30-boiler operating day rolling average basis.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(6) The 1-hour arithmetic averages required shall be expressed in ng/J, MMBtu/hr, or lb/MWh and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(7) All non-out-of-control CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (j)(5) of this section are not met.

(8) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, non-out-of-control emissions data for a minimum of 90 percent (only 75 percent is required prior to January 1, 2012) of all operating hours per 30-boiler operating day rolling average.

(q) *Compliance provisions for sources subject to § 60.42Da(b).* An owner or operator of an affected facility subject to the opacity standard in § 60.42Da(b) shall monitor the opacity of emissions discharged from the affected facility to the atmosphere according to the requirements in § 60.49Da(a), as applicable to the affected facility.

(r) Compliance provisions for sources subject to § 60.45Da. To determine compliance with the NO_X plus CO emissions limit, the owner or operator shall use the procedures specified in paragraphs (r)(1) through (3) of this section.

(1) Calculate NO_X emissions as 1.194×10^{-7} lb/scf-ppm times the average hourly NO_X output concentration in ppm (measured according to the provisions of § 60.49Da(c)), times the average hourly flow rate (measured in scfh, according to the provisions of § 60.49Da(l) or § 60.49Da(m)), divided by the average hourly gross energy output (measured according to the provisions of § 60.49Da(k)) or the average hourly net energy output, as applicable.

(2) Calculate CO emissions by multiplying the average hourly CO output concentration (measured according to the provisions of § 60.49Da(u), by the average hourly flow rate (measured according to the provisions of § 60.49Da(l) or § 60.49Da(m)), and dividing by the average hourly gross energy output (measured according to the provisions

of §60.49Da(k)) or the average hourly net energy output, as applicable.

(3) Calculate NO_X plus CO emissions by summing the NO_X emissions results from paragraph (r)(1) of this section plus the CO emissions results from paragraph (r)(2) of this section.

(s) Affirmative defense for exceedance of emissions limit during malfunction. In response to an action to enforce the standards set forth in paragraph §§60.42Da, 60.43Da, 60.44Da, and 60.45Da, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense as specified in paragraphs (s)(1) and (2) of this section. The affirmative defense shall not be available for claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (s)(2) of this section, and must prove by a preponderance of evidence that:

(i) The excess emissions:

(A) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design, or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when the applicable emissions limits were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount, and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(iv) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment, and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(2) *Notification*. The owner or operator of the affected source experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction or, if it is not possible to determine within two business days whether the malfunction caused or contributed to an exceedance, no later than two business days after the owner or operator knew or should have known that the malfunction caused or contributed to an exceedance, but, in no event later than two business days after the end of the averaging period, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of

the initial occurrence of the exceedance of the standard in § 63.9991 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (s)(1) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

[72 FR 32722, June 13, 2007, as amended at 74 FR 5079, Jan. 28, 2009; 76 FR 3522, Jan. 20, 2011; 77 FR 9454, Feb. 16, 2012; 78 FR 24083, Apr. 24, 2013]

§ 60.49Da Emission monitoring.

(a) An owner or operator of an affected facility subject to the opacity standard in § 60.42Da must monitor the opacity of emissions discharged from the affected facility to the atmosphere according to the applicable requirements in paragraphs (a)(1) through (4) of this section.

(1) Except as provided for in paragraphs (a)(2) and (4) of this section, the owner or operator of an affected facility subject to an opacity standard, shall install, calibrate, maintain, and operate a COMS, and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere. If opacity interference due to water droplets exists in the stack (for example, from the use of an FGD system), the opacity is monitored upstream of the interference (at the inlet to the FGD system). If opacity interference is experienced at all locations (both at the inlet and outlet of the SO_2 control system), alternate parameters indicative of the PM control system's performance and/or good combustion are monitored (subject to the approval of the Administrator).

(2) As an alternative to the monitoring requirements in paragraph (a)(1) of this section, an owner or operator of an affected facility that meets the conditions in either paragraph (a)(2)(i), (ii), (iii), or (iv) of this section may elect to monitor opacity as specified in paragraph (a)(3) of this section.

(i) The affected facility uses a fabric filter (baghouse) to meet the standards in § 60.42Da and a bag leak detection system is installed and operated according to the requirements in paragraphs § 60.48Da(o)(4)(i) through (v);

(ii) The affected facility burns only gaseous or liquid fuels (excluding residual oil) with potential SO_2 emissions rates of 26 ng/J (0.060 lb/MMBtu) or less, and does not use a post-combustion technology to reduce emissions of SO_2 or PM;

(iii) The affected facility meets all of the conditions specified in paragraphs (a)(2)(iii)(A) through (C) of this section.

(A) No post-combustion technology (except a wet scrubber) is used for reducing PM, SO_2, or CO emissions;

(B) Only natural gas, gaseous fuels, or fuel oils that contain less than or equal to 0.30 weight percent sulfur are burned; and

(C) Emissions of CO discharged to the atmosphere are maintained at levels less than or equal to 1.4 lb/MWh on a boiler operating day average basis as demonstrated by the use of a CEMS measuring CO emissions according to the procedures specified in paragraph (u) of this section; or

(iv) The affected facility uses an ESP and uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in section § 60.48Da of this part.

(3) The owner or operator of an affected facility that meets the conditions in paragraph (a)(2) of this section may, as an alternative to using a COMS, elect to monitor visible emissions using the applicable procedures specified in paragraphs (a)(3)(i) through (iv) of this section. The opacity performance test requirement in paragraph (a)(3)(i) must be conducted by April 29, 2011, within 45 days after stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later.

(i) The owner or operator shall conduct a performance test using Method 9 of appendix A–4 of this part and the procedures in § 60.11. If during the initial 60 minutes of the observation all the 6-minute averages are less than 10 percent and all the individual 15-second observations are less than or equal to

20 percent, then the observation period may be reduced from 3 hours to 60 minutes.

(ii) Except as provided in paragraph (a)(3)(iii) or (iv) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A–4 of this part performance tests using the procedures in paragraph (a)(3)(i) of this section according to the applicable schedule in paragraphs (a)(3)(ii)(A) through (a)(3)(ii)(C) of this section, as determined by the most recent Method 9 of appendix A–4 of this part performance test results.

(A) If the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(B) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(C) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.

(iii) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A–7 of this part according to the procedures specified in paragraphs (a)(3)(iii)(A) and (B) of this section.

(A) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A–7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.*, 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.*, 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.*, 90 seconds) or conduct a new Method 9 of appendix A–4 of this part performance test using the procedures in paragraph (a)(3)(i) of this section within 45 calendar days according to the requirements in §60.50Da(b)(3).

(B) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(iv) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations must be similar, but not necessarily identical, to the requirements in paragraph (a)(3)(iii) of this section. For reference purposes in preparing the monitoring plan, see OAQPS ''Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.'' This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and

Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(4) An owner or operator of an affected facility that is subject to an opacity standard under § 60.42Da is not required to operate a COMS provided that affected facility meets the conditions in either paragraph (a)(4)(i) or (ii) of this section.

(i) The affected facility combusts only gaseous and/or liquid fuels (excluding residue oil) where the potential SO_2 emissions rate of each fuel is no greater than 26 ng/J (0.060 lb/MMBtu), and the unit operates according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§ 60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under § 60.51Da(d).

(ii) The owner or operator of the affected facility installs, calibrates, operates, and maintains a particulate matter continuous parametric monitoring system (PM CPMS) according to the requirements specified in subpart UUUUU of part 63.

(b) The owner or operator of an affected facility must install, calibrate, maintain, and operate a CEMS, and record the output of the system, for measuring SO_2 emissions, except where only gaseous and/or liquid fuels (excluding residual oil) where the potential SO_2 emissions rate of each fuel is 26 ng/J (0.060 lb/MMBtu) or less are combusted, as follows:

(1) Sulfur dioxide emissions are monitored at both the inlet and outlet of the SO_2 control device.

(2) For a facility that qualifies under the numerical limit provisions of § 60.43Da, SO_2 emissions are only monitored as discharged to the atmosphere.

(3) An ''as fired'' fuel monitoring system (upstream of coal pulverizers) meeting the requirements of Method 19 of appendix A of this part may be used to determine potential SO_2 emissions in place of a continuous SO_2 emission monitor at the inlet to the SO_2 control device as required under paragraph (b)(1) of this section.

(4) If the owner or operator has installed and certified a SO_2 CEMS according to the requirements of § 75.20(c)(1) of this chapter and appendix A to part 75 of this chapter, and is continuing to meet the ongoing quality assurance requirements of § 75.21 of this chapter and appendix B to part 75 of this chapter, that CEMS may be used to meet the requirements of this section, provided that:

(i) A CO_2 or O_2 continuous monitoring system is installed, calibrated, maintained and operated at the same location, according to paragraph (d) of this section; and

(ii) For sources subject to an SO_2 emission limit in lb/MMBtu under § 60.43Da:

(A) When relative accuracy testing is conducted, SO_2 concentration data and CO_2 (or O_2) data are collected simultaneously; and

(B) In addition to meeting the applicable SO_2 and CO_2 (or O_2) relative accuracy specifications in Figure 2 of appendix B to part 75 of this chapter, the relative accuracy (RA) standard in section 13.2 of Performance Specification 2 in appendix B to this part is met when the RA is calculated on a lb/MMBtu basis; and

(iii) The reporting requirements of § 60.51Da are met. The SO_2 and, if required, CO_2 (or O_2) data reported to meet the requirements of § 60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the SO_2 data have been bias adjusted according to the procedures of part 75 of this chapter.

(c)(1) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS, and record the output of the system, for measuring NO_X emissions discharged to the atmosphere; or

(2) If the owner or operator has installed a NO_X emission rate CEMS to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of §60.51Da. Data reported to meet the requirements of §60.51Da shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(d) The owner or operator of an affected facility not complying with an output based limit shall install, calibrate, maintain, and operate a CEMS, and record the output of the system, for measuring the O_2 or carbon dioxide (CO_2) content of the flue gases at each location where SO_2 or NO_X emissions are monitored. For affected facilities subject to a lb/MMBtu SO_2 emission limit under §60.43Da, if the owner or operator has installed and certified a CO_2 or O_2 monitoring system according to §75.20(c) of this chapter and appendix A to part 75 of this chapter and the monitoring system continues to meet the applicable quality-assurance provisions of §75.21 of this chapter and appendix B to part 75 of this chapter, that CEMS may be used together with the part 75 SO_2 concentration monitoring system described in paragraph (b) of this section, to determine the SO_2 emission rate in lb/MMBtu. SO_2 data used to meet the requirements of §60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(e) The CEMS under paragraphs (b), (c), and (d) of this section are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments.

(f)(1) For units that began construction, reconstruction, or modification on or before February 28, 2005, the owner or operator shall obtain emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with CEMS, the owner or operator shall supplement emission data with other monitoring systems approved by the Administrator or the reference methods and procedures as described in paragraph (h) of this section.

(2) For units that began construction, reconstruction, or modification after February 28, 2005, the owner or operator shall obtain emission data for at least 90 percent of all operating hours for each 30 successive boiler operating days. If this minimum data requirement cannot be met with a CEMS, the owner or operator shall supplement emission data with other monitoring systems approved by the Administrator or the reference methods and procedures as described in paragraph (h) of this section.

(g) The 1-hour averages required under paragraph §60.13(h) are expressed in ng/J (lb/MMBtu) heat input and used to calculate the average emission rates under §60.48Da. The 1-hour averages are calculated using the data points required under §60.13(h)(2).

(h) When it becomes necessary to supplement CEMS data to meet the minimum data requirements in paragraph (f) of this section, the owner or operator shall use the reference methods and procedures as specified in this paragraph. Acceptable alternative methods and procedures are given in paragraph (j) of this section.

(1) Method 6 of appendix A of this part shall be used to determine the SO_2 concentration at the same location as the SO_2 monitor. Samples shall be taken at 60-minute intervals. The sampling time and sample volume for each sample shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Each sample represents a 1-hour average.

(2) Method 7 of appendix A of this part shall be used to determine the NO_X concentration at the same location as the NO_X monitor. Samples shall be taken at 30-minute intervals. The arithmetic average of two consecutive samples represents a 1-hour average.

(3) The emission rate correction factor, integrated bag sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O_2 or CO_2 concentration at the same location as the O_2 or CO_2 monitor. Samples shall be taken for at least 30 minutes in each hour. Each sample represents a 1-hour average.

(4) The procedures in Method 19 of appendix A of this part shall be used to compute each 1-hour average concentration in ng/J (lb/MMBtu) heat input.

(i) The owner or operator shall use methods and procedures in this paragraph to conduct monitoring system performance evaluations under § 60.13(c) and calibration checks under § 60.13(d). Acceptable alternative methods and procedures are given in paragraph (j) of this section.

(1) Methods 3B, 6, and 7 of appendix A of this part shall be used to determine O_2, SO_2, and NO_X concentrations, respectively.

(2) SO_2 or NO_X (NO), as applicable, shall be used for preparing the calibration gas mixtures (in N_2, as applicable) under Performance Specification 2 of appendix B of this part.

(3) For affected facilities burning only fossil fuel, the span value for a COMS is between 60 and 80 percent. Span values for a CEMS measuring NO_X shall be determined using one of the following procedures:

(i) Except as provided under paragraph (i)(3)(ii) of this section, NO_X span values shall be determined as follows:

Fossil fuel	Span values for NO_X (ppm)
Gas	500.
Liquid	500.
Solid	1,000.
Combination	500 (x + y) + 1,000z.

Where:

x = Fraction of total heat input derived from gaseous fossil fuel,

y = Fraction of total heat input derived from liquid fossil fuel, and

z = Fraction of total heat input derived from solid fossil fuel.

(ii) As an alternative to meeting the requirements of paragraph (i)(3)(i) of this section, the owner or operator of an affected facility may elect to use the NO_X span values determined according to section 2.1.2 in appendix A to part 75 of this chapter.

(4) All span values computed under paragraph (i)(3)(i) of this section for burning combinations of fossil fuels are rounded to the nearest 500 ppm. Span values computed under paragraph (i)(3)(ii) of this section shall be rounded off according to section 2.1.2 in appendix A to part 75 of this chapter.

(5) For affected facilities burning fossil fuel, alone or in combination with non-fossil fuel and determining span values under paragraph (i)(3)(i) of this section, the span value of the SO_2 CEMS at the inlet to the SO_2 control device is 125 percent of the maximum estimated hourly potential emissions of the fuel fired, and the outlet of the SO_2 control device is 50 percent of maximum estimated hourly potential emissions of the fuel fired. For affected facilities determining span values under paragraph (i)(3)(ii) of this section, SO_2 span values shall be determined according to section 2.1.1 in appendix A to part 75 of this chapter.

(j) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 6 of appendix A of this part, Method 6A or 6B (whenever Methods 6 and 3 or 3B of appendix A of this part data are used) or 6C of appendix A of this part may be used. Each Method 6B of appendix A of this part sample obtained over 24 hours represents 24 1-hour averages. If Method 6A or 6B of appendix A of this part is used under paragraph (i) of this section, the conditions under § 60.48Da(d)(1) apply; these conditions do not apply under paragraph (h) of this section.

(2) For Method 7 of appendix A of this part, Method 7A, 7C, 7D, or 7E of appendix A of this part may be used. If Method 7C, 7D, or 7E of appendix A of this part is used, the sampling time for each run shall be 1 hour.

(3) For Method 3 of appendix A of this part, Method 3A or 3B of appendix A of this part may be used if the sampling time is 1 hour.

(4) For Method 3B of appendix A of this part, Method 3A of appendix A of this part may be used.

(k) The procedures specified in paragraphs (k)(1) through (3) of this section

shall be used to determine gross energy output for sources demonstrating compliance with an output-based standard.

(1) The owner or operator of an affected facility with electricity generation shall install, calibrate, maintain, and operate a wattmeter; measure gross electrical output in MWh on a continuous basis; and record the output of the monitor.

(2) The owner or operator of an affected facility with process steam generation shall install, calibrate, maintain, and operate meters for steam flow, temperature, and pressure; measure gross process steam output in joules per hour (or Btu per hour) on a continuous basis; and record the output of the monitor.

(3) For an affected facility generating process steam in combination with electrical generation, the gross energy output is determined according to the definition of ''gross energy output'' specified in §60.41Da that is applicable to the affected facility.

(l) The owner or operator of an affected facility demonstrating compliance with an output-based standard shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of Performance Specification 6 of appendix B of this part and the calibration drift (CD) assessment, relative accuracy test audit (RATA), and reporting provisions of procedure 1 of appendix F of this part, and record the output of the system, for measuring the volumetric flow rate of exhaust gases discharged to the atmosphere; or

(m) Alternatively, data from a continuous flow monitoring system certified according to the requirements of §75.20(c) of this chapter and appendix A to part 75 of this chapter, and continuing to meet the applicable quality control and quality assurance requirements of §75.21 of this chapter and appendix B to part 75 of this chapter, may be used. Flow rate data reported to meet the requirements of §60.51Da shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(n) Gas-fired and oil-fired units. The owner or operator of an affected unit that qualifies as a gas-fired or oil-fired unit, as defined in 40 CFR 72.2, may use, as an alternative to the requirements specified in either paragraph (l) or (m) of this section, a fuel flow monitoring system certified and operated according to the requirements of appendix D of part 75 of this chapter.

(o) The owner or operator of a duct burner, as described in §60.41Da, which is subject to the NO_X standards of §60.44Da(a)(1), (d)(1), or (e)(1) is not required to install or operate a CEMS to measure NO_X emissions; a wattmeter to measure gross electrical output; meters to measure steam flow, temperature, and pressure; and a continuous flow monitoring system to measure the flow of exhaust gases discharged to the atmosphere.

(p)–(r) [Reserved]

(s) The owner or operator shall prepare and submit to the Administrator for approval a unit-specific monitoring plan for each monitoring system, at least 45 days before commencing certification testing of the monitoring systems. The owner or operator shall comply with the requirements in your plan. The plan must address the requirements in paragraphs (s)(1) through (6) of this section.

(1) Installation of the CEMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of the exhaust emissions (*e.g.*, on or downstream of the last control device);

(2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems;

(3) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations, relative accuracy test audits (RATA), etc.);

(4) Ongoing operation and maintenance procedures in accordance with the general requirements of §60.13(d) or part 75 of this chapter (as applicable);

(5) Ongoing data quality assurance procedures in accordance with the general requirements of §60.13 or part 75 of this chapter (as applicable); and

(6) Ongoing recordkeeping and reporting procedures in accordance with the requirements of this subpart.

(t) The owner or operator of an affected facility demonstrating compliance with the output-based emissions limit under § 60.42Da must either install, certify, operate, and maintain a CEMS for measuring PM emissions according to the requirements of paragraph (v) of this section or install, calibrate, operate, and maintain a PM CPMS according to the requirements for new facilities specified in subpart UUUUU of part 63 of this chapter. An owner or operator of an affected facility demonstrating compliance with the input-based emissions limit in § 60.42Da may install, certify, operate, and maintain a CEMS for measuring PM emissions according to the requirements of paragraph (v) of this section.

(u) The owner or operator of an affected facility using a CEMS measuring CO emissions to meet requirements of this subpart shall meet the requirements specified in paragraphs (u)(1) through (4) of this section.

(1) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (u)(1)(i) through (iv) of this section.

(i) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in § 60.58b(i)(3) of subpart Eb of this part.

(ii) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(iii) At a minimum, non-out-of-control 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-boiler operating day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).

(iv) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(2) You must calculate the 1-hour average CO emissions levels for each boiler operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly useful energy output from the affected facility. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each boiler operating day.

(3) You must evaluate the preceding 24-hour average CO emission level each boiler operating day excluding periods of affected facility startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 1.4 lb/MWh, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 1.4 lb/MWh or less.

(4) You must record the CO measurements and calculations performed according to paragraph (u)(3) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 1.4 lb/MWh, and the date, time, and description of the corrective action.

(v) The owner or operator of an affected facility using a CEMS measuring PM emissions to meet requirements of this subpart shall install, certify, operate, and maintain the CEMS as specified in paragraphs (v)(1) through (v)(4) of this section.

(1) The owner or operator shall conduct a performance evaluation of the CEMS according to the applicable requirements of § 60.13, Performance Specification 11 in appendix B of this part, and procedure 2 in appendix F of this part.

(2) During each PM correlation testing run of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the CEMS and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall be used; and

(ii) For O_2 (or CO_2), Method 3A or 3B of appendix A–2 of this part, as applicable shall be used.

(3) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(4) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in §60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.*, reference method) data and performance test (*i.e.*, compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFire database.

(w) The owner or operator using a SO_2, NO_X, CO_2, and O_2 CEMS to meet the requirements of this subpart shall install, certify, operate, and maintain the CEMS as specified in paragraphs (w)(1) through (w)(5) of this section.

(1) Except as provided for under paragraphs (w)(2), (w)(3), and (w)(4) of this section, each SO_2, NO_X, CO_2, and O_2 CEMS required under paragraphs (b) through (d) of this section shall be installed, certified, and operated in accordance with the applicable procedures in Performance Specification 2 or 3 in appendix B to this part or according to the procedures in appendices A and B to part 75 of this chapter. Daily calibration drift assessments and quarterly accuracy determinations shall be done in accordance with Procedure 1 in appendix F to this part, and a data assessment report (DAR), prepared according to section 7 of Procedure 1 in appendix F to this part, shall be submitted with each compliance report required under §60.51Da.

(2) As an alternative to meeting the requirements of paragraph (w)(1) of this section, an owner or operator may elect to implement the following alternative data accuracy assessment procedures. For all required CO_2 and O_2 CEMS and for SO_2 and NO_X CEMS with span values greater than or equal to 100 ppm, the daily calibration error test and calibration adjustment procedures described in sections 2.1.1 and 2.1.3 of appendix B to part 75 of this chapter may be followed instead of the CD assessment procedures in Procedure 1, section 4.1 of appendix F of this part. If this option is selected, the data validation and out-of-control provisions in sections 2.1.4 and 2.1.5 of appendix B to part 75 of this chapter shall be followed instead of the excessive CD and out-of-control criteria in Procedure 1, section 4.3 of appendix F to this part. For the purposes of data validation under this subpart, the excessive CD and out-of-control criteria in Procedure 1, section 4.3 of appendix F to this part shall apply to SO_2 and NO_X span values less than 100 ppm;

(3) As an alternative to meeting the requirements of paragraph (w)(1) of this section, an owner or operator may elect to may elect to implement the following alternative data accuracy assessment procedures. For all required CO_2 and O_2 CEMS and for SO_2 and NO_X CEMS with span values greater than 30 ppm, quarterly linearity checks may be performed in accordance with section 2.2.1 of appendix B to part 75 of this chapter, instead of performing the cylinder gas audits (CGAs) described in Procedure 1, section 5.1.2 of appendix F to this part. If this option is selected: The frequency of the linearity checks shall be as specified in section 2.2.1 of appendix B to part 75 of this chapter; the applicable linearity specifications in section 3.2 of appendix A to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.2.3 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.2.4 of appendix B to part 75 of

this chapter shall apply. For the purposes of data validation under this subpart, the cylinder gas audits described in Procedure 1, section 5.1.2 of appendix F to this part shall be performed for SO_2 and NO_X span values less than or equal to 30 ppm;

(4) As an alternative to meeting the requirements of paragraph (w)(1) of this section, an owner or operator may elect to may elect to implement the following alternative data accuracy assessment procedures. For SO_2, CO_2, and O_2 CEMS and for NO_X CEMS, RATAs may be performed in accordance with section 2.3 of appendix B to part 75 of this chapter instead of following the procedures described in Procedure 1, section 5.1.1 of appendix F to this part. If this option is selected: The frequency of each RATA shall be as specified in section 2.3.1 of appendix B to part 75 of this chapter; the applicable relative accuracy specifications shown in Figure 2 in appendix B to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.3.2 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.3.3 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the relative accuracy specification in section 13.2 of Performance Specification 2 in appendix B to this part shall be met on a lb/MMBtu basis for SO_2 (regardless of the SO_2 emission level during the RATA), and for NO_X when the average NO_X emission rate measured by the reference method during the RATA is less than 0.100 lb/MMBtu;

(5) If the owner or operator elects to implement the alternative data assessment procedures described in paragraphs (w)(2) through (w)(4) of this section, each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and calibration error or drift assessments required by paragraphs (w)(2) through (w)(4) of this section.

[72 FR 32722, June 13, 2007, as amended at 74 FR 5081, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9456, Feb. 16, 2012; 77 FR 23402, Apr. 19, 2012; 78 FR 24083, Apr. 24, 2013]

§ 60.50Da Compliance determination procedures and methods.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the methods in appendix A of this part or the methods and procedures as specified in this section, except as provided in § 60.8(b). Section 60.8(f) does not apply to this section for SO_2 and NO_X. Acceptable alternative methods are given in paragraph (e) of this section.

(b) In conducting the performance tests to determine compliance with the PM emissions limits in § 60.42Da, the owner or operator shall meet the requirements specified in paragraphs (b)(1) through (3) of this section.

(1) The owner or operator shall measure filterable PM to determine compliance with the applicable PM emissions limit in § 60.42Da as specified in paragraphs (b)(1)(i) through (ii) of this section.

(i) The dry basis F factor (O_2) procedures in Method 19 of appendix A of this part shall be used to compute the emission rate of PM.

(ii) For the PM concentration, Method 5 of appendix A of this part shall be used for an affected facility that does not use a wet FGD. For an affected facility that uses a wet FGD, Method 5B of appendix A of this part shall be used downstream of the wet FGD.

(A) The sampling time and sample volume for each run shall be at least 120 minutes and 1.70 dscm (60 dscf). The probe and filter holder heating system in the sampling train may be set to provide an average gas temperature of no greater than 160 ± 14 °C (320 ± 25 °F).

(B) For each particulate run, the emission rate correction factor, integrated or grab sampling and analysis procedures of Method 3B of appendix A of this part shall be used to determine the O_2 concentration. The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 of appendix A of this part is used to locate the 12 O_2 traverse points. If the grab sampling procedure is used, the O_2 concentration

for the run shall be the arithmetic mean of the sample O_2 concentrations at all traverse points.

(2) In conjunction with a performance test performed according to the requirements in paragraph (b)(1) of this section, the owner or operator of an affected facility for which construction, reconstruction, or modification commenced after May 3, 2011, shall measure condensable PM using Method 202 of appendix M of part 51.

(3) Method 9 of appendix A of this part and the procedures in §60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the SO_2 standards in §60.43Da as follows:

(1) The percent of potential SO_2 emissions (%Ps) to the atmosphere shall be computed using the following equation:

$$\%P_s = \frac{(100 - \%R_f)(100 - \%R_g)}{100}$$

Where:

%Ps = Percent of potential SO_2 emissions, percent;

%Rf = Percent reduction from fuel pretreatment, percent; and

%Rg = Percent reduction by SO_2 control system, percent.

(2) The procedures in Method 19 of appendix A of this part may be used to determine percent reduction ($\%R_f$) of sulfur by such processes as fuel pretreatment (physical coal cleaning, hydrodesulfurization of fuel oil, etc.), coal pulverizers, and bottom and fly ash interactions. This determination is optional.

(3) The procedures in Method 19 of appendix A of this part shall be used to determine the percent SO_2 reduction ($\%R_g$) of any SO_2 control system. Alternatively, a combination of an ''as fired'' fuel monitor and emission rates measured after the control system, following the procedures in Method 19 of appendix A of this part, may be used if the percent reduction is calculated using the average emission rate from the SO_2 control device and the average SO_2 input rate from the ''as fired'' fuel analysis for 30 successive boiler operating days.

(4) The appropriate procedures in Method 19 of appendix A of this part shall be used to determine the emission rate.

(5) The CEMS in §60.49Da(b) and (d) shall be used to determine the concentrations of SO_2 and CO_2 or O_2.

(d) The owner or operator shall determine compliance with the NO_X standard in §60.44Da as follows:

(1) The appropriate procedures in Method 19 of appendix A of this part shall be used to determine the emission rate of NO_X.

(2) The continuous monitoring system in §60.49Da(c) and (d) shall be used to determine the concentrations of NO_X and CO_2 or O_2.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5 or 5B of appendix A–3 of this part, Method 17 of appendix A–6 of this part may be used at facilities with or without wet FGD systems if the stack temperature at the sampling location does not exceed an average temperature of 160 °C (320 °F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A–3 of this part may be used in Method 17 of appendix A–6 of this part only if it is used after wet FGD systems. Method 17 of appendix A–6 of this part shall not be used after wet FGD systems if the effluent is saturated or laden with water droplets.

(2) The F_c factor (CO_2) procedures in Method 19 of appendix A of this part may be used to compute the emission rate of PM under the stipulations of §60.46(d)(1). The CO_2 shall be determined in the same manner as the O_2 concentration.

(f) The owner or operator of an electric utility combined cycle gas turbine that does not meet the definition of an IGCC must conduct performance tests for PM, SO_2, and NO_X using the procedures of Method 19 of appendix A–7 of this part. The SO_2 and NO_X emission rates calculations from the gas turbine used in Method 19 of appendix A–7 of this part are determined when the gas turbine is performance tested under subpart GG of this part. The potential uncontrolled PM emission rate from a

gas turbine is defined as 17 ng/J (0.04 lb/MMBtu) heat input.

[72 FR 32722, June 13, 2007, as amended at 74 FR 5083, Jan. 28, 2009; 77 FR 9458, Feb. 16, 2012; 78 FR 24084, Apr. 24, 2013]

§ 60.51Da Reporting requirements.

(a) For SO_2, NO_X, PM, and NO_X plus CO emissions, the performance test data from the initial and subsequent performance test and from the performance evaluation of the continuous monitors (including the transmissometer) must be reported to the Administrator.

(b) For SO_2 and NO_X the following information is reported to the Administrator for each 24-hour period.

(1) Calendar date.

(2) The average SO_2 and NO_X emission rates (ng/J, lb/MMBtu, or lb/MWh) for each 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the emission standards; and, description of corrective actions taken.

(3) For owners or operators of affected facilities complying with the percent reduction requirement, percent reduction of the potential combustion concentration of SO_2 for each 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the standard; and, description of corrective actions taken.

(4) Identification of the boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 75 percent of the hours of operation of the facility; justification for not obtaining sufficient data; and description of corrective actions taken.

(5) Identification of the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, or malfunction.

(6) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted.

(7) Identification of times when hourly averages have been obtained based on manual sampling methods.

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS.

(9) Description of any modifications to CEMS which could affect the ability of the CEMS to comply with Performance Specifications 2 or 3.

(c) If the minimum quantity of emission data as required by § 60.49Da is not obtained for any 30 successive boiler operating days, the following information obtained under the requirements of § 60.48Da(h) is reported to the Administrator for that 30-day period:

(1) The number of hourly averages available for outlet emission rates (no) and inlet emission rates (n_i) as applicable.

(2) The standard deviation of hourly averages for outlet emission rates (s_o) and inlet emission rates (s_i) as applicable.

(3) The lower confidence limit for the mean outlet emission rate (E_o*) and the upper confidence limit for the mean inlet emission rate (E_i*) as applicable.

(4) The applicable potential combustion concentration.

(5) The ratio of the upper confidence limit for the mean outlet emission rate (E_o*) and the allowable emission rate (E_{std}) as applicable.

(d) In addition to the applicable requirements in § 60.7, the owner or operator of an affected facility subject to the opacity limits in § 60.43c(c) and conducting performance tests using Method 9 of appendix A–4 of this part shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraph (d)(1) of this section.

(1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (d)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets.

(2) [Reserved]

(e) If fuel pretreatment credit toward the SO_2 emission standard under

§60.43Da is claimed, the owner or operator of the affected facility shall submit a signed statement:

(1) Indicating what percentage cleaning credit was taken for the calendar quarter, and whether the credit was determined in accordance with the provisions of §60.50Da and Method 19 of appendix A of this part; and

(2) Listing the quantity, heat content, and date each pretreated fuel shipment was received during the previous quarter; the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the previous quarter.

(f) For any periods for which opacity, SO_2 or NO_X emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(g) [Reserved]

(h) The owner or operator of the affected facility shall submit a signed statement indicating whether:

(1) The required CEMS calibration, span, and drift checks or other periodic audits have or have not been performed as specified.

(2) The data used to show compliance was or was not obtained in accordance with approved methods and procedures of this part and is representative of plant performance.

(3) The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.

(4) Compliance with the standards has or has not been achieved during the reporting period.

(i) For the purposes of the reports required under §60.7, periods of excess emissions are defined as all 6-minute periods during which the average opacity exceeds the applicable opacity standards under §60.42Da(b). Opacity levels in excess of the applicable opacity standard and the date of such excesses are to be submitted to the Administrator each calendar quarter.

(j) The owner or operator of an affected facility shall submit the written reports required under this section and subpart A to the Administrator semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

(k) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_X and/or opacity in lieu of submitting the written reports required under paragraphs (b) and (i) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period.

[72 FR 32722, June 13, 2007, as amended at 74 FR 5083, Jan. 28, 2009; 77 FR 9458, Feb. 16, 2012]

§60.52Da Recordkeeping requirements.

(a) [Reserved]

(b) The owner or operator of an affected facility subject to the opacity limits in §60.42Da(b) that elects to monitor emissions according to the requirements in §60.49Da(a)(3) shall maintain records according to the requirements specified in paragraphs (b)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (b)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (b)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator.

[74 FR 5083, Jan. 28, 2009, as amended at 77 FR 9459, Feb. 16, 2012]

Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

SOURCE: 72 FR 32742, June 13, 2007, unless otherwise noted.

§ 60.40b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).

(b) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1984, but on or before June 19, 1986, is subject to the following standards:

(1) Coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the particulate matter (PM) and nitrogen oxides (NO_X) standards under this subpart.

(2) Coal-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; § 60.40) are subject to the PM and NO_X standards under this subpart and to the sulfur dioxide (SO_2) standards under subpart D (§ 60.43).

(3) Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the NO_X standards under this subpart.

(4) Oil-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; § 60.40) are also subject to the NO_X standards under this subpart and the PM and SO_2 standards under subpart D (§ 60.42 and § 60.43).

(c) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_X standards under this subpart and the SO_2 standards under subpart J or subpart Ja of this part, as applicable.

(d) Affected facilities that also meet the applicability requirements under subpart E (Standards of performance for incinerators; § 60.50) are subject to the NO_X and PM standards under this subpart.

(e) Steam generating units meeting the applicability requirements under subpart Da (Standards of performance for electric utility steam generating units; § 60.40Da) are not subject to this subpart.

(f) Any change to an existing steam generating unit for the sole purpose of combusting gases containing total reduced sulfur (TRS) as defined under § 60.281 is not considered a modification under § 60.14 and the steam generating unit is not subject to this subpart.

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State.

(1) Section 60.44b(f).

(2) Section 60.44b(g).

(3) Section 60.49b(a)(4).

(h) Any affected facility that meets the applicability requirements and is subject to subpart Ea, subpart Eb, subpart AAAA, or subpart CCCC of this part is not subject to this subpart.

(i) Affected facilities (*i.e.*, heat recovery steam generators) that are associated with stationary combustion turbines and that meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other affected facilities (*i.e.* heat recovery steam generators with duct burners) that are capable of combusting more than 29 MW (100 MMBtu/h) heat input of fossil fuel. If the affected facility (*i.e.* heat recovery steam generator) is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(j) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1986 is not subject to subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators, §60.40).

(k) Any affected facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart Cb or subpart BBBB of this part is not covered by this subpart.

(l) Affected facilities that also meet the applicability requirements under subpart BB of this part (Standards of Performance for Kraft Pulp Mills) are subject to the SO_2 and NO_X standards under this subpart and the PM standards under subpart BB.

(m) Temporary boilers are not subject to this subpart.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§60.41b Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in §60.42b(a), §60.43b(a), or §60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

Byproduct/waste means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide (CO_2) levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

Chemical manufacturing plants mean industrial plants that are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any byproduct of coal mining or coal cleaning operations with an ash content greater than 50 percent, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis.

Cogeneration, also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source.

Coke oven gas means the volatile constituents generated in the gaseous exhaust during the carbonization of bituminous coal to form coke.

Combined cycle system means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a steam generating unit.

Conventional technology means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17), diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see § 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see § 60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see § 60.17).

Dry flue gas desulfurization technology means a SO_2 control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under § 60.49b(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State Implementation Plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Full capacity means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

Gaseous fuel means any fuel that is a gas at ISO conditions. This includes, but is not limited to, natural gas and gasified coal (including coke oven gas).

Gross output means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work

performed is the gross electrical or mechanical output plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output or to enhance the performance of the unit (*i.e.*, steam delivered to an industrial process).

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

Heat release rate means the steam generating unit design heat input capacity (in MW or Btu/hr) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

Heat transfer medium means any material that is used to transfer heat from one point to another point.

High heat release rate means a heat release rate greater than 730,000 J/sec-m^3 (70,000 Btu/hr-ft^3).

ISO Conditions means a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals.

Lignite means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17).

Low heat release rate means a heat release rate of 730,000 J/sec-m^3 (70,000 Btu/hr-ft^3) or less.

Mass-feed stoker steam generating unit means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

Maximum heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

Municipal-type solid waste means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

Petroleum refinery means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems. For gasified coal or oil that is desulfurized prior to combustion, the *Potential sulfur dioxide emission rate* is the theoretical SO_2 emissions (ng/J or lb/MMBtu heat input) that would result from combusting fuel in a cleaned state without using any post combustion emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Pulp and paper mills means industrial plants that are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

Pulverized coal-fired steam generating unit means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units. Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17).

Spreader stoker steam generating unit means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Steam generating unit means a device that combusts any fuel or byproduct/waste and produces steam or heats water or heats any heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means any gaseous or liquid fuel-fired steam generating unit that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Very low sulfur oil means for units constructed, reconstructed, or modified on or before February 28, 2005, oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO_2 emission control, has a SO_2 emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005 and not located in a noncontinental area, *very low sulfur oil* means oil that contains no more than 0.30 weight percent sulfur or that, when combusted without SO_2 emission control, has a SO_2 emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005 and located in a noncontinental area, *very low sulfur oil* means oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO_2 emission control, has a SO_2 emission rate equal to or less than 215 ng/J (0.50 lb/MMBtu) heat input.

Wet flue gas desulfurization technology means a SO_2 control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid

material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§60.42b Standard for sulfur dioxide (SO_2).

(a) Except as provided in paragraphs (b), (c), (d), or (j) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or oil shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction) and the emission limit determined according to the following formula:

$$E_s = \frac{(K_a H_a + K_b H_b)}{(H_a + H_b)}$$

Where:

E_s = SO_2 emission limit, in ng/J or lb/MMBtu heat input;
K_a = 520 ng/J (or 1.2 lb/MMBtu);
K_b = 340 ng/J (or 0.80 lb/MMBtu);
H_a = Heat input from the combustion of coal, in J (MMBtu); and
H_b = Heat input from the combustion of oil, in J (MMBtu).

For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(b) On and after the date on which the performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal refuse alone in a fluidized bed combustion steam generating unit shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) or 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input. If coal or oil is fired with coal refuse, the affected facility is subject to paragraph (a) or (d) of this section, as applicable. For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(c) On and after the date on which the performance test is completed or is required to be completed under §60.8, whichever comes first, no owner or operator of an affected facility that combusts coal or oil, either alone or in combination with any other fuel, and that uses an emerging technology for the control of SO_2 emissions, shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 50 percent of the potential SO_2 emission rate (50 percent reduction) and that contain SO_2 in excess of the emission limit determined according to the following formula:

$$E_s = \frac{(K_c H_c + K_d H_d)}{(H_c + H_d)}$$

Where:

E_s = SO2 emission limit, in ng/J or lb/MM Btu heat input;

K_c = 260 ng/J (or 0.60 lb/MMBtu);

K_d = 170 ng/J (or 0.40 lb/MMBtu);

H_c = Heat input from the combustion of coal, in J (MMBtu); and

H_d = Heat input from the combustion of oil, in J (MMBtu).

For facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels, or from the heat input derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(d) On and after the date on which the performance test is completed or required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005 and listed in paragraphs (d)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.5 lb/MMBtu) heat input if the affected facility combusts oil other than very low sulfur oil. Percent reduction requirements are not applicable to affected facilities under paragraphs (d)(1), (2), (3) or (4) of this section. For facilities complying with paragraphs (d)(1), (2), or (3) of this section, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in this paragraph. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(1) Affected facilities that have an annual capacity factor for coal and oil of 30 percent (0.30) or less and are subject to a federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil of 30 percent (0.30) or less;

(2) Affected facilities located in a noncontinental area; or

(3) Affected facilities combusting coal or oil, alone or in combination with any fuel, in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal and oil in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from the exhaust gases entering the duct burner; or

(4) The affected facility burns coke oven gas alone or in combination with natural gas or very low sulfur distillate oil.

(e) Except as provided in paragraph (f) of this section, compliance with the emission limits, fuel oil sulfur limits, and/or percent reduction requirements under this section are determined on a 30-day rolling average basis.

(f) Except as provided in paragraph (j)(2) of this section, compliance with the emission limits or fuel oil sulfur limits under this section is determined on a 24-hour average basis for affected facilities that (1) have a federally enforceable permit limiting the annual capacity factor for oil to 10 percent or less, (2) combust only very low sulfur oil, and (3) do not combust any other fuel.

(g) Except as provided in paragraph (i) of this section and § 60.45b(a), the SO_2 emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(h) Reductions in the potential SO_2 emission rate through fuel pretreatment are not credited toward the percent reduction requirement under paragraph (c) of this section unless:

(1) Fuel pretreatment results in a 50 percent or greater reduction in potential SO_2 emissions and

(2) Emissions from the pretreated fuel (without combustion or post-combustion SO_2 control) are equal to or

less than the emission limits specified in paragraph (c) of this section.

(i) An affected facility subject to paragraph (a), (b), or (c) of this section may combust very low sulfur oil or natural gas when the SO_2 control system is not being operated because of malfunction or maintenance of the SO_2 control system.

(j) Percent reduction requirements are not applicable to affected facilities combusting only very low sulfur oil. The owner or operator of an affected facility combusting very low sulfur oil shall demonstrate that the oil meets the definition of very low sulfur oil by: (1) Following the performance testing procedures as described in § 60.45b(c) or § 60.45b(d), and following the monitoring procedures as described in § 60.47b(a) or § 60.47b(b) to determine SO_2 emission rate or fuel oil sulfur content; or (2) maintaining fuel records as described in § 60.49b(r).

(k)(1) Except as provided in paragraphs (k)(2), (k)(3), and (k)(4) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO_2 emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input. For facilities complying with the percent reduction standard and paragraph (k)(3) of this section, only the heat input supplied to the affected facility from the combustion of coal and oil is counted in paragraph (k) of this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat derived from exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

(2) Units firing only very low sulfur oil, gaseous fuel, a mixture of these fuels, or a mixture of these fuels with any other fuels with a potential SO_2 emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from the SO_2 emissions limit in paragraph (k)(1) of this section.

(3) Units that are located in a noncontinental area and that combust coal, oil, or natural gas shall not discharge any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input if the affected facility combusts coal, or 215 ng/J (0.50 lb/MMBtu) heat input if the affected facility combusts oil or natural gas.

(4) As an alternative to meeting the requirements under paragraph (k)(1) of this section, modified facilities that combust coal or a mixture of coal with other fuels shall not cause to be discharged into the atmosphere any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011]

§ 60.43b Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005 that combusts coal or combusts mixtures of coal with other fuels, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/MMBtu) heat input, (i) If the affected facility combusts only coal, or

(ii) If the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels greater than 10 percent (0.10) and is subject to a federally enforceable requirement

limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(3) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal or coal and other fuels and

(i) Has an annual capacity factor for coal or coal and other fuels of 30 percent (0.30) or less,

(ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less,

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for coal or coal and other solid fuels, and

(iv) Construction of the affected facility commenced after June 19, 1984, and before November 25, 1986.

(4) An affected facility burning coke oven gas alone or in combination with other fuels not subject to a PM standard under § 60.43b and not using a post-combustion technology (except a wet scrubber) for reducing PM or SO_2 emissions is not subject to the PM limits under § 60.43b(a).

(b) On and after the date on which the performance test is completed or required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, and that combusts oil (or mixtures of oil with other fuels) and uses a conventional or emerging technology to reduce SO_2 emissions shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(c) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, and that combusts wood, or wood with other fuels, except coal, shall cause to be discharged from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor greater than 30 percent (0.30) for wood.

(2) 86 ng/J (0.20 lb/MMBtu) heat input if (i) The affected facility has an annual capacity factor of 30 percent (0.30) or less for wood;

(ii) Is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for wood; and

(iii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less.

(d) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input;

(i) If the affected facility combusts only municipal-type solid waste; or

(ii) If the affected facility combusts municipal-type solid waste and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts municipal-type solid waste or municipal-type solid waste and other fuels; and

(i) Has an annual capacity factor for municipal-type solid waste and other fuels of 30 percent (0.30) or less;

(ii) Has a maximum heat input capacity of 73 MW (250 MMBtu/hr) or less;

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for municipal-type solid waste, or municipal-type solid waste and other fuels; and

(iv) Construction of the affected facility commenced after June 19, 1984, but on or before November 25, 1986.

(e) For the purposes of this section, the annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type

solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum heat input capacity.

(f) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. An owner or operator of an affected facility that elects to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and is subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less is exempt from the opacity standard specified in this paragraph.

(g) The PM and opacity standards apply at all times, except during periods of startup, shutdown, or malfunction.

(h)(1) Except as provided in paragraphs (h)(2), (h)(3), (h)(4), (h)(5), and (h)(6) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input,

(2) As an alternative to meeting the requirements of paragraph (h)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity of 73 MW (250 MMBtu/h) or less shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(4) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a maximum heat input capacity greater than 73 MW (250 MMBtu/h) shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 37 ng/J (0.085 lb/MMBtu) heat input.

(5) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, an owner or operator of an affected facility not located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.30 weight percent sulfur, coke oven gas, a mixture of these fuels, or either

fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in § 60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO_2 or PM emissions is not subject to the PM limits in (h)(1) of this section.

(6) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, an owner or operator of an affected facility located in a noncontinental area that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.5 weight percent sulfur, coke oven gas, a mixture of these fuels, or either fuel (or a mixture of these fuels) in combination with other fuels not subject to a PM standard in § 60.43b and not using a post-combustion technology (except a wet scrubber) to reduce SO_2 or PM emissions is not subject to the PM limits in (h)(1) of this section.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5084, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§ 60.44b Standard for nitrogen oxides (NO_X).

(a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X (expressed as NO_2) in excess of the following emission limits:

Fuel/steam generating unit type	Nitrogen oxide emission limits (expressed as NO_2) heat input	
	ng/J	lb/MMBTu
(1) Natural gas and distillate oil, except (4):		
(i) Low heat release rate	43	0.10
(ii) High heat release rate	86	0.20
(2) Residual oil:		
(i) Low heat release rate	130	0.30
(ii) High heat release rate	170	0.40
(3) Coal:		
(i) Mass-feed stoker	210	0.50
(ii) Spreader stoker and fluidized bed combustion	260	0.60
(iii) Pulverized coal	300	0.70
(iv) Lignite, except (v)	260	0.60
(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace	340	0.80
(vi) Coal-derived synthetic fuels	210	0.50
(4) Duct burner used in a combined cycle system:		
(i) Natural gas and distillate oil	86	0.20
(ii) Residual oil	170	0.40

(b) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts mixtures of only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X in excess of a limit determined by the use of the following formula:

$$E_n = \frac{(EL_{go}H_{go}) + (EL_{ro}H_{ro}) + (EL_cH_c)}{(H_{go} + H_{ro} + H_c)}$$

Where:

E_n = NO_X emission limit (expressed as NO_2), ng/J (lb/MMBtu);

EL_{go} = Appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/MMBtu);

H_{go} = Heat input from combustion of natural gas or distillate oil, J (MMBtu);

EL_{ro} = Appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng/J (lb/MMBtu);

H_{ro} = Heat input from combustion of residual oil, J (MMBtu);

EL_c = Appropriate emission limit from paragraph (a)(3) for combustion of coal, ng/J (lb/MMBtu); and

H_c = Heat input from combustion of coal, J (MMBtu).

(c) Except as provided under paragraph (d) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal or oil, natural gas (or any combination of the three), and wood, or any other fuel shall cause to be discharged into the atmosphere any gases that contain NO_X in excess of the emission limit for the coal, oil, natural gas (or any combination of the three), combusted in the affected facility, as determined pursuant to paragraph (a) or (b) of this section. This standard does not apply to an affected facility that is subject to and in compliance with a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, natural gas (or any combination of the three).

(d) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts natural gas and/or distillate oil with a potential SO_2 emissions rate of 26 ng/J (0.060 lb/MMBtu) or less with wood, municipal-type solid waste, or other solid fuel, except coal, shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X in excess of 130 ng/J (0.30 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for natural gas, distillate oil, or a mixture of these fuels of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas, distillate oil, or a mixture of these fuels.

(e) Except as provided under paragraph (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts only coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain NO_X in excess of the emission limit determined by the following formula unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less:

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a NO_X emission limit that shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as NO_X emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

(1) Any owner or operator of an affected facility petitioning for a facility-specific NO_X emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, by conducting a 30-day performance test as provided in § 60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the

emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

(2) The NO_X emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific NO_X emission limit will be established at the NO_X emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing NO_X emissions. In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO_X limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(g) Any owner or operator of an affected facility that combusts hazardous waste (as defined by 40 CFR part 261 or 40 CFR part 761) with natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the NO_X emission limit that applies specifically to that affected facility. The petition must include sufficient and appropriate data, as determined by the Administrator, on NO_X emissions from the affected facility, waste destruction efficiencies, waste composition (including nitrogen content), the quantity of specific wastes to be combusted and combustion conditions to allow the Administrator to determine if the affected facility is able to comply with the NO_X emission limits required by this section. The owner or operator of the affected facility shall demonstrate that when hazardous waste is combusted in the affected facility, thermal destruction efficiency requirements for hazardous waste specified in an applicable federally enforceable requirement preclude compliance with the NO_X emission limits of this section. The NO_X emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, are applicable to the affected facility until and unless the petition is approved by the Administrator. (See 40 CFR 761.70 for regulations applicable to the incineration of materials containing polychlorinated biphenyls (PCB's).) In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO_X limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(h) For purposes of paragraph (i) of this section, the NO_X standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

(j) Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis for subsequent performance tests for any affected facilities that:

(1) Combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less;

(2) Have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less; and

(3) Are subject to a federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30

weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less.

(k) Affected facilities that meet the criteria described in paragraphs (j)(1), (2), and (3) of this section, and that have a heat input capacity of 73 MW (250 MMBtu/hr) or less, are not subject to the NO_X emission limits under this section.

(l) On and after the date on which the initial performance test is completed or is required to be completed under 60.8, whichever date is first, no owner or operator of an affected facility that commenced construction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain NOx (expressed as NO2) in excess of the following limits:

(1) 86 ng/J (0.20 lb/MMBtu) heat input if the affected facility combusts coal, oil, or natural gas (or any combination of the three), alone or with any other fuels. The affected facility is not subject to this limit if it is subject to and in compliance with a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas (or any combination of the three); or

(2) If the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input on a 30-day rolling average from the combustion of all fuels, a limit determined by use of the following formula:

$$E_n = \frac{(0.10 \times H_{go}) + (0.20 \times H_r)}{(H_{go} + H_r)}$$

Where:

E_n = NO_X emission limit, (lb/MMBtu);

H_{go} = 30-day heat input from combustion of natural gas or distillate oil; and

H_r = 30-day heat input from combustion of any other fuel.

(3) After February 27, 2006, units where more than 10 percent of total annual output is electrical or mechanical may comply with an optional limit of 270 ng/J (2.1 lb/MWh) gross energy output, based on a 30-day rolling average. Units complying with this output-based limit must demonstrate compliance according to the procedures of §60.48Da(i) of subpart Da of this part, and must monitor emissions according to §60.49Da(c), (k), through (n) of subpart Da of this part.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009; 77 FR 9459, Feb. 16, 2012]

§60.45b Compliance and performance test methods and procedures for sulfur dioxide.

(a) The SO_2 emission standards in §60.42b apply at all times. Facilities burning coke oven gas alone or in combination with any other gaseous fuels or distillate oil are allowed to exceed the limit 30 operating days per calendar year for SO_2 control system maintenance.

(b) In conducting the performance tests required under §60.8, the owner or operator shall use the methods and procedures in appendix A (including fuel certification and sampling) of this part or the methods and procedures as specified in this section, except as provided in §60.8(b). Section 60.8(f) does not apply to this section. The 30-day notice required in §60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential SO_2 emission rate (% P_s) and the SO_2 emission rate (E_s) pursuant to §60.42b following the procedures listed below, except as provided under paragraph (d) and (k) of this section.

(1) The initial performance test shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the SO_2 standards shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

(2) If only coal, only oil, or a mixture of coal and oil is combusted, the following procedures are used:

(i) The procedures in Method 19 of appendix A–7 of this part are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS of § 60.47b(a) or (b).

(ii) The percent of potential SO_2 emission rate ($\%P_s$) emitted to the atmosphere is computed using the following formula:

$$\%P_s = 100\left(1 - \frac{\%R_g}{100}\right)\left(1 - \frac{\%R_f}{100}\right)$$

Where:

$\%P_s$ = Potential SO_2 emission rate, percent;
$\%R_g$ = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and
$\%R_f$ = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(3) If coal or oil is combusted with other fuels, the same procedures required in paragraph (c)(2) of this section are used, except as provided in the following:

(i) An adjusted hourly SO_2 emission rate ($E_{ho}{}^o$) is used in Equation 19–19 of Method 19 of appendix A of this part to compute an adjusted 30-day average emission rate ($E_{ao}{}^o$). The Eho° is computed using the following formula:

$$E_{ho}^o = \frac{E_{ho} - E_w\left(1 - X_k\right)}{X_k}$$

Where:

$E_{ho}{}^o$ = Adjusted hourly SO_2 emission rate, ng/J (lb/MMBtu);
E_{ho} = Hourly SO_2 emission rate, ng/J (lb/MMBtu);
E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by the fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted; and
X_k = Fraction of total heat input from fuel combustion derived from coal, oil, or coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(ii) To compute the percent of potential SO_2 emission rate ($\%P_s$), an adjusted $\%R_g$ ($\%R_g{}^o$) is computed from the adjusted $E_{ao}{}^o$ from paragraph (b)(3)(i) of this section and an adjusted average SO_2 inlet rate ($E_{ai}{}^o$) using the following formula:

$$\%R_g^o = 100\left(1.0 - \frac{E_{ao}^o}{E_{ai}^o}\right)$$

To compute $E_{ai}{}^o$, an adjusted hourly SO_2 inlet rate ($E_{hi}{}^o$) is used. The $E_{hi}{}^o$ is computed using the following formula:

$$E_{hi}^o = \frac{E_{hi} - E_w\left(1 - X_k\right)}{X_k}$$

Where:

$E_{hi}{}^o$ = Adjusted hourly SO_2 inlet rate, ng/J (lb/MMBtu); and
E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu).

(4) The owner or operator of an affected facility subject to paragraph (c)(3) of this section does not have to measure parameters E_w or X_k if the owner or operator elects to assume that X_k= 1.0. Owners or operators of affected facilities who assume X_k = 1.0 shall:

(i) Determine $\%P_s$ following the procedures in paragraph (c)(2) of this section; and

(ii) Sulfur dioxide emissions (E_s) are considered to be in compliance with SO_2 emission limits under § 60.42b.

(5) The owner or operator of an affected facility that qualifies under the provisions of § 60.42b(d) does not have to measure parameters E_w or X_k in paragraph (c)(3) of this section if the owner or operator of the affected facility elects to measure SO_2 emission rates of the coal or oil following the fuel sampling and analysis procedures in Method 19 of appendix A–7 of this part.

(d) Except as provided in paragraph (j) of this section, the owner or operator of an affected facility that combusts only very low sulfur oil, natural gas, or a mixture of these fuels, has an annual capacity factor for oil of 10 percent (0.10) or less, and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for oil of 10 percent (0.10) or less shall:

(1) Conduct the initial performance test over 24 consecutive steam generating unit operating hours at full load;

(2) Determine compliance with the standards after the initial performance test based on the arithmetic average of the hourly emissions data during each steam generating unit operating day if a CEMS is used, or based on a daily average if Method 6B of appendix A of this part or fuel sampling and analysis procedures under Method 19 of appendix A of this part are used.

(e) The owner or operator of an affected facility subject to §60.42b(d)(1) shall demonstrate the maximum design capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. This demonstration will be made during the initial performance test and a subsequent demonstration may be requested at any other time. If the 24-hour average firing rate for the affected facility is less than the maximum design capacity provided by the manufacturer of the affected facility, the 24-hour average firing rate shall be used to determine the capacity utilization rate for the affected facility, otherwise the maximum design capacity provided by the manufacturer is used.

(f) For the initial performance test required under §60.8, compliance with the SO_2 emission limits and percent reduction requirements under §60.42b is based on the average emission rates and the average percent reduction for SO_2 for the first 30 consecutive steam generating unit operating days, except as provided under paragraph (d) of this section. The initial performance test is the only test for which at least 30 days prior notice is required unless otherwise specified by the Administrator. The initial performance test is to be scheduled so that the first steam generating unit operating day of the 30 successive steam generating unit operating days is completed within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility. The boiler load during the 30-day period does not have to be the maximum design load, but must be representative of future operating conditions and include at least one 24-hour period at full load.

(g) After the initial performance test required under §60.8, compliance with the SO_2 emission limits and percent reduction requirements under §60.42b is based on the average emission rates and the average percent reduction for SO_2 for 30 successive steam generating unit operating days, except as provided under paragraph (d). A separate performance test is completed at the end of each steam generating unit operating day after the initial performance test, and a new 30-day average emission rate and percent reduction for SO_2 are calculated to show compliance with the standard.

(h) Except as provided under paragraph (i) of this section, the owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraph (c), of this section whether or not the minimum emissions data requirements under §60.46b are achieved. All valid emissions data, including valid SO_2 emission data collected during periods of startup, shutdown and malfunction, shall be used in calculating $\%P_s$ and E_{ho} pursuant to paragraph (c) of this section.

(i) During periods of malfunction or maintenance of the SO_2 control systems when oil is combusted as provided under §60.42b(i), emission data are not used to calculate $\%P_s$ or E_s under §60.42b(a), (b) or (c), however, the emissions data are used to determine compliance with the emission limit under §60.42b(i).

(j) The owner or operator of an affected facility that only combusts very low sulfur oil, natural gas, or a mixture of these fuels with any other fuels not subject to an SO_2 standard is not subject to the compliance and performance testing requirements of this section if the owner or operator obtains fuel receipts as described in §60.49b(r).

(k) The owner or operator of an affected facility seeking to demonstrate compliance in §§60.42b(d)(4), 60.42b(j), 60.42b(k)(2), and 60.42b(k)(3) (when not burning coal) shall follow the applicable procedures in §60.49b(r).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009]

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

(a) The PM emission standards and opacity limits under § 60.43b apply at all times except during periods of startup, shutdown, or malfunction. The NO_X emission standards under § 60.44b apply at all times.

(b) Compliance with the PM emission standards under § 60.43b shall be determined through performance testing as described in paragraph (d) of this section, except as provided in paragraph (i) of this section.

(c) Compliance with the NO_X emission standards under § 60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.

(d) To determine compliance with the PM emission limits and opacity limits under § 60.43b, the owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, using the following procedures and reference methods:

(1) Method 3A or 3B of appendix A–2 of this part is used for gas analysis when applying Method 5 of appendix A–3 of this part or Method 17 of appendix A–6 of this part.

(2) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:

(i) Method 5 of appendix A of this part shall be used at affected facilities without wet flue gas desulfurization (FGD) systems; and

(ii) Method 17 of appendix A–6 of this part may be used at facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A–3 of this part may be used in Method 17 of appendix A–6 of this part only if it is used after a wet FGD system. Do not use Method 17 of appendix A–6 of this part after wet FGD systems if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part is to be used only after wet FGD systems.

(3) Method 1 of appendix A of this part is used to select the sampling site and the number of traverse sampling points. The sampling time for each run is at least 120 minutes and the minimum sampling volume is 1.7 dscm (60 dscf) except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(4) For Method 5 of appendix A of this part, the temperature of the sample gas in the probe and filter holder is monitored and is maintained at 160±14 °C (320±25 °F).

(5) For determination of PM emissions, the oxygen (O_2) or CO_2 sample is obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.

(6) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rate expressed in ng/J heat input is determined using:

(i) The O_2 or CO_2 measurements and PM measurements obtained under this section;

(ii) The dry basis F factor; and

(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.

(7) Method 9 of appendix A of this part is used for determining the opacity of stack emissions.

(e) To determine compliance with the emission limits for NO_X required under § 60.44b, the owner or operator of an affected facility shall conduct the performance test as required under § 60.8 using the continuous system for monitoring NO_X under § 60.48(b).

(1) For the initial compliance test, NO_X from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the NO_X emission standards under § 60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

(2) Following the date on which the initial performance test is completed

or is required to be completed in §60.8, whichever date comes first, the owner or operator of an affected facility which combusts coal (except as specified under §60.46b(e)(4)) or which combusts residual oil having a nitrogen content greater than 0.30 weight percent shall determine compliance with the NO_X emission standards in §60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated for each steam generating unit operating day as the average of all of the hourly NO_X emission data for the preceding 30 steam generating unit operating days.

(3) Following the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that has a heat input capacity greater than 73 MW (250 MMBtu/hr) and that combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall determine compliance with the NO_X standards under §60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_X emission data for the preceding 30 steam generating unit operating days.

(4) Following the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less and that combusts natural gas, distillate oil, gasified coal, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the NO_X standards in §60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, NO_X emissions data collected pursuant to §60.48b(g)(1) or §60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the NO_X emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_X emission data for the preceding 30 steam generating unit operating days.

(5) If the owner or operator of an affected facility that combusts residual oil does not sample and analyze the residual oil for nitrogen content, as specified in §60.49b(e), the requirements of §60.48b(g)(1) apply and the provisions of §60.48b(g)(2) are inapplicable.

(f) To determine compliance with the emissions limits for NO_X required by §60.44b(a)(4) or §60.44b(l) for duct burners used in combined cycle systems, either of the procedures described in paragraph (f)(1) or (2) of this section may be used:

(1) The owner or operator of an affected facility shall conduct the performance test required under §60.8 as follows:

(i) The emissions rate (E) of NO_X shall be computed using Equation 1 in this section:

$$E = E_{sg} + \left(\frac{H_g}{H_b}\right)\left(E_{sg} - E_g\right) \qquad \text{(Eq.1)}$$

Where:

E = Emissions rate of NO_X from the duct burner, ng/J (lb/MMBtu) heat input;

E_{sg} = Combined effluent emissions rate, in ng/J (lb/MMBtu) heat input using appropriate F factor as described in Method 19 of appendix A of this part;

H_g = Heat input rate to the combustion turbine, in J/hr (MMBtu/hr);

H_b = Heat input rate to the duct burner, in J/hr (MMBtu/hr); and

E_g = Emissions rate from the combustion turbine, in ng/J (lb/MMBtu) heat input calculated using appropriate F factor as described in Method 19 of appendix A of this part.

(ii) Method 7E of appendix A of this part shall be used to determine the NO_X concentrations. Method 3A or 3B of appendix A of this part shall be used to determine O_2 concentration.

(iii) The owner or operator shall identify and demonstrate to the Administrator's satisfaction suitable methods to determine the average hourly heat input rate to the combustion turbine and the average hourly heat input rate to the affected duct burner.

(iv) Compliance with the emissions limits under § 60.44b(a)(4) or § 60.44b(l) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests; or

(2) The owner or operator of an affected facility may elect to determine compliance on a 30-day rolling average basis by using the CEMS specified under § 60.48b for measuring NO_X and O_2 and meet the requirements of § 60.48b. The sampling site shall be located at the outlet from the steam generating unit. The NO_X emissions rate at the outlet from the steam generating unit shall constitute the NO_X emissions rate from the duct burner of the combined cycle system.

(g) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall demonstrate the maximum heat input capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. The owner or operator of an affected facility shall determine the maximum heat input capacity using the heat loss method or the heat input method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1 (incorporated by reference, see § 60.17). This demonstration of maximum heat input capacity shall be made during the initial performance test for affected facilities that meet the criteria of § 60.44b(j). It shall be made within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of each facility, for affected facilities meeting the criteria of § 60.44b(k). Subsequent demonstrations may be required by the Administrator at any other time. If this demonstration indicates that the maximum heat input capacity of the affected facility is less than that stated by the manufacturer of the affected facility, the maximum heat input capacity determined during this demonstration shall be used to determine the capacity utilization rate for the affected facility. Otherwise, the maximum heat input capacity provided by the manufacturer is used.

(h) The owner or operator of an affected facility described in § 60.44b(j) that has a heat input capacity greater than 73 MW (250 MMBtu/hr) shall:

(1) Conduct an initial performance test as required under § 60.8 over a minimum of 24 consecutive steam generating unit operating hours at maximum heat input capacity to demonstrate compliance with the NO_X emission standards under § 60.44b using Method 7, 7A, 7E of appendix A of this part, or other approved reference methods; and

(2) Conduct subsequent performance tests once per calendar year or every 400 hours of operation (whichever comes first) to demonstrate compliance with the NO_X emission standards under § 60.44b over a minimum of 3 consecutive steam generating unit operating hours at maximum heat input capacity using Method 7, 7A, 7E of appendix A of this part, or other approved reference methods.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the PM limit in paragraphs § 60.43b(a)(4) or § 60.43b(h)(5) shall follow the applicable procedures in § 60.49b(r).

(j) In place of PM testing with Method 5 or 5B of appendix A–3 of this part, or Method 17 of appendix A–6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall comply with the requirements specified in paragraphs (j)(1) through (j)(14) of this section.

(1) Notify the Administrator one month before starting use of the system.

(2) Notify the Administrator one month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial start-up of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the

Administrator of use of the CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under §60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (j) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.

(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.

(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraphs (j)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (j)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.

(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (j)(7) of this section are not met.

(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30-to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall be used; and

(ii) For O_2 (or CO_2), Method 3A or 3B of appendix A–2 of this part, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours per 30-day rolling average.

(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in §60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.*, reference method) data and performance test (*i.e.*, compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert_tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5086, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9460, Feb. 16, 2012]

§60.47b Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (b) and (f) of this section, the owner or operator of an affected facility subject to the SO_2 standards in §60.42b shall install, calibrate, maintain, and operate CEMS for measuring SO_2 concentrations and either O_2 or CO_2 concentrations and shall record the output of the systems. For units complying with the

percent reduction standard, the SO_2 and either O_2 or CO_2 concentrations shall both be monitored at the inlet and outlet of the SO_2 control device. If the owner or operator has installed and certified SO_2 and O_2 or CO_2 CEMS according to the requirements of § 75.20(c)(1) of this chapter and appendix A to part 75 of this chapter, and is continuing to meet the ongoing quality assurance requirements of § 75.21 of this chapter and appendix B to part 75 of this chapter, those CEMS may be used to meet the requirements of this section, provided that:

(1) When relative accuracy testing is conducted, SO_2 concentration data and CO_2 (or O_2) data are collected simultaneously; and

(2) In addition to meeting the applicable SO_2 and CO_2 (or O_2) relative accuracy specifications in Figure 2 of appendix B to part 75 of this chapter, the relative accuracy (RA) standard in section 13.2 of Performance Specification 2 in appendix B to this part is met when the RA is calculated on a lb/MMBtu basis; and

(3) The reporting requirements of § 60.49b are met. SO_2 and CO_2 (or O_2) data used to meet the requirements of § 60.49b shall not include substitute data values derived from the missing data procedures in subpart D of part 75 of this chapter, nor shall the SO_2 data have been bias adjusted according to the procedures of part 75 of this chapter.

(b) As an alternative to operating CEMS as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emissions and percent reduction by:

(1) Collecting coal or oil samples in an as-fired condition at the inlet to the steam generating unit and analyzing them for sulfur and heat content according to Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate, or

(2) Measuring SO_2 according to Method 6B of appendix A of this part at the inlet or outlet to the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in section 3.2 and the applicable procedures in section 7 of Performance Specification 2. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 or 3B of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent.

(3) A daily SO_2 emission rate, E_D, shall be determined using the procedure described in Method 6A of appendix A of this part, section 7.6.2 (Equation 6A–8) and stated in ng/J (lb/MMBtu) heat input.

(4) The mean 30-day emission rate is calculated using the daily measured values in ng/J (lb/MMBtu) for 30 successive steam generating unit operating days using equation 19–20 of Method 19 of appendix A of this part.

(c) The owner or operator of an affected facility shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator or the reference methods and procedures as described in paragraph (b) of this section.

(d) The 1-hour average SO_2 emission rates measured by the CEMS required by paragraph (a) of this section and required under § 60.13(h) is expressed in ng/J or lb/MMBtu heat input and is

used to calculate the average emission rates under §60.42(b). Each 1-hour average SO_2 emission rate must be based on 30 or more minutes of steam generating unit operation. The hourly averages shall be calculated according to §60.13(h)(2). Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a given clock hour and are not counted toward determination of a steam generating unit operating day.

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) Except as provided for in paragraph (e)(4) of this section, all CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.

(2) Except as provided for in paragraph (e)(4) of this section, quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.

(3) For affected facilities combusting coal or oil, alone or in combination with other fuels, the span value of the SO_2 CEMS at the inlet to the SO_2 control device is 125 percent of the maximum estimated hourly potential SO_2 emissions of the fuel combusted, and the span value of the CEMS at the outlet to the SO_2 control device is 50 percent of the maximum estimated hourly potential SO_2 emissions of the fuel combusted. Alternatively, SO_2 span values determined according to section 2.1.1 in appendix A to part 75 of this chapter may be used.

(4) As an alternative to meeting the requirements of requirements of paragraphs (e)(1) and (e)(2) of this section, the owner or operator may elect to implement the following alternative data accuracy assessment procedures:

(i) For all required CO_2 and O_2 monitors and for SO_2 and NO_X monitors with span values greater than or equal to 100 ppm, the daily calibration error test and calibration adjustment procedures described in sections 2.1.1 and 2.1.3 of appendix B to part 75 of this chapter may be followed instead of the CD assessment procedures in Procedure 1, section 4.1 of appendix F to this part.

(ii) For all required CO_2 and O_2 monitors and for SO_2 and NO_X monitors with span values greater than 30 ppm, quarterly linearity checks may be performed in accordance with section 2.2.1 of appendix B to part 75 of this chapter, instead of performing the cylinder gas audits (CGAs) described in Procedure 1, section 5.1.2 of appendix F to this part. If this option is selected: The frequency of the linearity checks shall be as specified in section 2.2.1 of appendix B to part 75 of this chapter; the applicable linearity specifications in section 3.2 of appendix A to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.2.3 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.2.4 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the cylinder gas audits described in Procedure 1, section 5.1.2 of appendix F to this part shall be performed for SO_2 and NO_X span values less than or equal to 30 ppm; and

(iii) For SO_2, CO_2, and O_2 monitoring systems and for NO_X emission rate monitoring systems, RATAs may be performed in accordance with section 2.3 of appendix B to part 75 of this chapter instead of following the procedures described in Procedure 1, section 5.1.1 of appendix F to this part. If this option is selected: The frequency of each RATA shall be as specified in section 2.3.1 of appendix B to part 75 of this chapter; the applicable relative accuracy specifications shown in Figure 2 in appendix B to part 75 of this chapter shall be met; the data validation and out-of-control criteria in section 2.3.2 of appendix B to part 75 of this chapter shall be followed instead of the excessive audit inaccuracy and out-of-control criteria in Procedure 1, section 5.2 of appendix F to this part; and the grace period provisions in section 2.3.3 of appendix B to part 75 of this chapter shall apply. For the purposes of data validation under this subpart, the relative accuracy specification in section 13.2 of Performance Specification 2 in appendix B to this part shall be met on

a lb/MMBtu basis for SO_2 (regardless of the SO_2 emission level during the RATA), and for NO_X when the average NO_X emission rate measured by the reference method during the RATA is less than 0.100 lb/MMBtu.

(f) The owner or operator of an affected facility that combusts very low sulfur oil or is demonstrating compliance under § 60.45b(k) is not subject to the emission monitoring requirements under paragraph (a) of this section if the owner or operator maintains fuel records as described in § 60.49b(r).

[72 FR 32742, June 13, 2007, as amended at 74 FR 5087, Jan. 28, 2009]

§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.

(a) Except as provided in paragraph (j) of this section, the owner or operator of an affected facility subject to the opacity standard under § 60.43b shall install, calibrate, maintain, and operate a continuous opacity monitoring systems (COMS) for measuring the opacity of emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility subject to an opacity standard under § 60.43b and meeting the conditions under paragraphs (j)(1), (2), (3), (4), (5), or (6) of this section who elects not to use a COMS shall conduct a performance test using Method 9 of appendix A–4 of this part and the procedures in § 60.11 to demonstrate compliance with the applicable limit in § 60.43b by April 29, 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later, and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. The observation period for Method 9 of appendix A–4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.

(1) Except as provided in paragraph (a)(2) and (a)(3) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A–4 of this part performance tests using the procedures in paragraph (a) of this section according to the applicable schedule in paragraphs (a)(1)(i) through (a)(1)(iv) of this section, as determined by the most recent Method 9 of appendix A–4 of this part performance test results.

(i) If no visible emissions are observed, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(ii) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.

(2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A–7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.

(i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using

Method 22 of appendix A–7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.*, 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.*, 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.*, 90 seconds) or conduct a new Method 9 of appendix A–4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in § 60.46d(d)(7).

(ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS ''Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.'' This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility subject to a NO_X standard under § 60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate CEMS for measuring NO_X and O_2 (or CO_2) emissions discharged to the atmosphere, and shall record the output of the system; or

(2) If the owner or operator has installed a NO_X emission rate CEMS to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of § 60.49b. Data reported to meet the requirements of § 60.49b shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(c) The CEMS required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average NO_X emission rates measured by the continuous NO_X monitor required by paragraph (b) of this section and required under § 60.13(h) shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under § 60.44b. The 1-hour averages shall be calculated using the data points required under § 60.13(h)(2).

(e) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(1) For affected facilities combusting coal, wood or municipal-type solid waste, the span value for a COMS shall be between 60 and 80 percent.

(2) For affected facilities combusting coal, oil, or natural gas, the span value for NO_X is determined using one of the following procedures:

(i) Except as provided under paragraph (e)(2)(ii) of this section, NO_X span values shall be determined as follows:

Fuel	Span values for NO_X (ppm)
Natural gas	500.
Oil	500.
Coal	1,000.
Mixtures	500 (x + y) + 1,000z.

Where:

x = Fraction of total heat input derived from natural gas;

y = Fraction of total heat input derived from oil; and

z = Fraction of total heat input derived from coal.

(ii) As an alternative to meeting the requirements of paragraph (e)(2)(i) of this section, the owner or operator of an affected facility may elect to use the NO_X span values determined according to section 2.1.2 in appendix A to part 75 of this chapter.

(3) All span values computed under paragraph (e)(2)(i) of this section for combusting mixtures of regulated fuels are rounded to the nearest 500 ppm. Span values computed under paragraph (e)(2)(ii) of this section shall be rounded off according to section 2.1.2 in appendix A to part 75 of this chapter.

(f) When NO_X emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of appendix A of this part, Method 7A of appendix A of this part, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less, and that has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight percent or less, natural gas, distillate oil, gasified coal, or any mixture of these fuels, greater than 10 percent (0.10) shall:

(1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section; or

(2) Monitor steam generating unit operating conditions and predict NO_X emission rates as specified in a plan submitted pursuant to § 60.49b(c).

(h) The owner or operator of a duct burner, as described in § 60.41b, that is subject to the NO_X standards in § 60.44b(a)(4), § 60.44b(e), or § 60.44b(l) is not required to install or operate a continuous emissions monitoring system to measure NO_X emissions.

(i) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) is not required to install or operate a CEMS for measuring NO_X emissions.

(j) The owner or operator of an affected facility that meets the conditions in either paragraph (j)(1), (2), (3), (4), (5), (6), or (7) of this section is not required to install or operate a COMS if:

(1) The affected facility uses a PM CEMS to monitor PM emissions; or

(2) The affected facility burns only liquid (excluding residual oil) or gaseous fuels with potential SO_2 emissions rates of 26 ng/J (0.060 lb/MMBtu) or less and does not use a post-combustion technology to reduce SO_2 or PM emissions. The owner or operator must maintain fuel records of the sulfur content of the fuels burned, as described under § 60.49b(r); or

(3) The affected facility burns coke oven gas alone or in combination with fuels meeting the criteria in paragraph (j)(2) of this section and does not use a post-combustion technology to reduce SO_2 or PM emissions; or

(4) The affected facility does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2, or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur, and is operated such that emissions of CO to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a steam generating unit operating day average basis. Owners and operators of affected facilities electing to comply with this paragraph

must demonstrate compliance according to the procedures specified in paragraphs (j)(4)(i) through (iv) of this section; or

(i) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (j)(4)(i)(A) through (D) of this section.

(A) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in § 60.58b(i)(3) of subpart Eb of this part.

(B) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(C) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).

(D) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(ii) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.

(iii) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.

(iv) You must record the CO measurements and calculations performed according to paragraph (j)(4) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.

(5) The affected facility uses a bag leak detection system to monitor the performance of a fabric filter (baghouse) according to the most current requirements in section § 60.48Da of this part; or

(6) The affected facility uses an ESP as the primary PM control device and uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the most current requirements in section § 60.48Da of this part; or

(7) The affected facility burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur and operates according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard.

(k) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in § 60.46b(j). The CEMS specified in paragraph § 60.46b(j) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(l) An owner or operator of an affected facility that is subject to an opacity standard under § 60.43b(f) is not required to operate a COMS provided that the unit burns only gaseous fuels and/or liquid fuels (excluding residue oil) with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit operates according to a written site-specific monitoring plan approved by the permitting

authority is not required to operate a COMS. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§ 60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under § 60.49b(h).

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§ 60.49b Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by § 60.7. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility;

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i);

(3) The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired; and

(4) Notification that an emerging technology will be used for controlling emissions of SO_2. The Administrator will examine the description of the emerging technology and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42b(a) unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2, PM, and/or NO_X emission limits under §§ 60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B of this part. The owner or operator of each affected facility described in § 60.44b(j) or § 60.44b(k) shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.

(c) The owner or operator of each affected facility subject to the NO_X standard in § 60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions in the provisions of § 60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored in § 60.48b(g)(2) and the records to be maintained in § 60.49b(g). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. An affected facility burning coke oven gas alone or in combination with other gaseous fuels or distillate oil shall submit this plan to the Administrator for approval within 360 days of the initial startup of the affected facility or by November 30, 2009, whichever date comes later. If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO_X emission rates (*i.e.*, ng/J or lbs/MMBtu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (*i.e.*, the ratio of primary air to secondary and/or tertiary air) and the level of excess air (*i.e.*, flue gas O_2 level);

(2) Include the data and information that the owner or operator used to identify the relationship between NO_X

emission rates and these operating conditions; and

(3) Identify how these operating conditions, including steam generating unit load, will be monitored under § 60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under § 60.49b(g).

(d) Except as provided in paragraph (d)(2) of this section, the owner or operator of an affected facility shall record and maintain records as specified in paragraph (d)(1) of this section.

(1) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(2) As an alternative to meeting the requirements of paragraph (d)(1) of this section, the owner or operator of an affected facility that is subject to a federally enforceable permit restricting fuel use to a single fuel such that the facility is not required to continuously monitor any emissions (excluding opacity) or parameters indicative of emissions may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(e) For an affected facility that combusts residual oil and meets the criteria under §§ 60.46b(e)(4), 60.44b(j), or (k), the owner or operator shall maintain records of the nitrogen content of the residual oil combusted in the affected facility and calculate the average fuel nitrogen content for the reporting period. The nitrogen content shall be determined using ASTM Method D4629 (incorporated by reference, see § 60.17), or fuel suppliers. If residual oil blends are being combusted, fuel nitrogen specifications may be prorated based on the ratio of residual oils of different nitrogen content in the fuel blend.

(f) For an affected facility subject to the opacity standard in § 60.43b, the owner or operator shall maintain records of opacity. In addition, an owner or operator that elects to monitor emissions according to the requirements in § 60.48b(a) shall maintain records according to the requirements specified in paragraphs (f)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (f)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (f)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements

specified in the site-specific monitoring plan approved by the Administrator.

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the NO_X standards under § 60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date;

(2) The average hourly NO_X emission rates (expressed as NO_2) (ng/J or lb/MMBtu heat input) measured or predicted;

(3) The 30-day average NO_X emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;

(4) Identification of the steam generating unit operating days when the calculated 30-day average NO_X emission rates are in excess of the NO_X emissions standards under § 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

(7) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(h) The owner or operator of any affected facility in any category listed in paragraphs (h)(1) or (2) of this section is required to submit excess emission reports for any excess emissions that occurred during the reporting period.

(1) Any affected facility subject to the opacity standards in § 60.43b(f) or to the operating parameter monitoring requirements in § 60.13(i)(1).

(2) Any affected facility that is subject to the NO_X standard of § 60.44b, and that:

(i) Combusts natural gas, distillate oil, gasified coal, or residual oil with a nitrogen content of 0.3 weight percent or less; or

(ii) Has a heat input capacity of 73 MW (250 MMBtu/hr) or less and is required to monitor NO_X emissions on a continuous basis under § 60.48b(g)(1) or steam generating unit operating conditions under § 60.48b(g)(2).

(3) For the purpose of § 60.43b, excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards under § 60.43b(f).

(4) For purposes of § 60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average NO_X emission rate, as determined under § 60.46b(e), that exceeds the applicable emission limits in § 60.44b.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_X under § 60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(j) The owner or operator of any affected facility subject to the SO_2 standards under § 60.42b shall submit reports.

(k) For each affected facility subject to the compliance and performance testing requirements of § 60.45b and the reporting requirement in paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates covered in the reporting period;

(2) Each 30-day average SO_2 emission rate (ng/J or lb/MMBtu heat input) measured during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken; For an exceedance due to maintenance of the

SO_2 control system covered in paragraph 60.45b(a), the report shall identify the days on which the maintenance was performed and a description of the maintenance;

(3) Each 30-day average percent reduction in SO_2 emissions calculated during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(4) Identification of the steam generating unit operating days that coal or oil was combusted and for which SO_2 or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken;

(5) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit;

(6) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted;

(7) Identification of times when hourly averages have been obtained based on manual sampling methods;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3;

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part; and

(11) The annual capacity factor of each fired as provided under paragraph (d) of this section.

(l) For each affected facility subject to the compliance and performance testing requirements of § 60.45b(d) and the reporting requirements of paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates when the facility was in operation during the reporting period;

(2) The 24-hour average SO_2 emission rate measured for each steam generating unit operating day during the reporting period that coal or oil was combusted, ending in the last 24-hour period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(3) Identification of the steam generating unit operating days that coal or oil was combusted for which $S0_2$ or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and description of corrective action taken;

(4) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit;

(5) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted;

(6) Identification of times when hourly averages have been obtained based on manual sampling methods;

(7) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(8) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(9) Results of daily CEMS drift tests and quarterly accuracy assessments as required under Procedure 1 of appendix F 1 of this part. If the owner or operator elects to implement the alternative data assessment procedures described in §§ 60.47b(e)(4)(i) through (e)(4)(iii), each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and calibration error or drift assessments required by §§ 60.47b(e)(4)(i) through (e)(4)(iii).

(m) For each affected facility subject to the SO_2 standards in § 60.42(b) for

which the minimum amount of data required in § 60.47b(c) were not obtained during the reporting period, the following information is reported to the Administrator in addition to that required under paragraph (k) of this section:

(1) The number of hourly averages available for outlet emission rates and inlet emission rates;

(2) The standard deviation of hourly averages for outlet emission rates and inlet emission rates, as determined in Method 19 of appendix A of this part, section 7;

(3) The lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in Method 19 of appendix A of this part, section 7; and

(4) The ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in Method 19 of appendix A of this part, section 7.

(n) If a percent removal efficiency by fuel pretreatment (*i.e.*, $\%R_f$) is used to determine the overall percent reduction (*i.e.*, $\%R_o$) under § 60.45b, the owner or operator of the affected facility shall submit a signed statement with the report.

(1) Indicating what removal efficiency by fuel pretreatment (*i.e.*, $\%R_f$) was credited during the reporting period;

(2) Listing the quantity, heat content, and date each pre-treated fuel shipment was received during the reporting period, the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the reporting period;

(3) Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit; and

(4) Including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of Method 19 of appendix A of this part and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

(p) The owner or operator of an affected facility described in § 60.44b(j) or (k) shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date;

(2) The number of hours of operation; and

(3) A record of the hourly steam load.

(q) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall submit to the Administrator a report containing:

(1) The annual capacity factor over the previous 12 months;

(2) The average fuel nitrogen content during the reporting period, if residual oil was fired; and

(3) If the affected facility meets the criteria described in § 60.44b(j), the results of any NO_X emission tests required during the reporting period, the hours of operation during the reporting period, and the hours of operation since the last NO_X emission test.

(r) The owner or operator of an affected facility who elects to use the fuel based compliance alternatives in § 60.42b or § 60.43b shall either:

(1) The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil, natural gas, wood, a mixture of these fuels, or any of these fuels (or a mixture of these fuels) in combination with other fuels that are known to contain an insignificant amount of sulfur in § 60.42b(j) or § 60.42b(k) shall obtain and maintain at the affected facility fuel receipts (such as a current, valid purchase contract, tariff sheet, or transportation contract) from the fuel supplier that certify that the oil meets the definition of distillate oil and gaseous fuel meets the definition of natural gas as defined in § 60.41b and the applicable sulfur limit. For the purposes of this section, the distillate oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low

sulfur oil meeting this definition, natural gas, wood, and/or other fuels that are known to contain insignificant amounts of sulfur were combusted in the affected facility during the reporting period; or

(2) The owner or operator of an affected facility who elects to demonstrate compliance based on fuel analysis in §60.42b or §60.43b shall develop and submit a site-specific fuel analysis plan to the Administrator for review and approval no later than 60 days before the date you intend to demonstrate compliance. Each fuel analysis plan shall include a minimum initial requirement of weekly testing and each analysis report shall contain, at a minimum, the following information:

(i) The potential sulfur emissions rate of the representative fuel mixture in ng/J heat input;

(ii) The method used to determine the potential sulfur emissions rate of each constituent of the mixture. For distillate oil and natural gas a fuel receipt or tariff sheet is acceptable;

(iii) The ratio of different fuels in the mixture; and

(iv) The owner or operator can petition the Administrator to approve monthly or quarterly sampling in place of weekly sampling.

(s) Facility specific NO_X standard for Cytec Industries Fortier Plant's C.AOG incinerator located in Westwego, Louisiana:

(1) *Definitions.*

Oxidation zone is defined as the portion of the C.AOG incinerator that extends from the inlet of the oxidizing zone combustion air to the outlet gas stack.

Reducing zone is defined as the portion of the C.AOG incinerator that extends from the burner section to the inlet of the oxidizing zone combustion air.

Total inlet air is defined as the total amount of air introduced into the C.AOG incinerator for combustion of natural gas and chemical by-product waste and is equal to the sum of the air flow into the reducing zone and the air flow into the oxidation zone.

(2) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the NO_X emission limit for fossil fuel in §60.44b(a) applies.

(ii) When natural gas and chemical by-product waste are simultaneously combusted, the NO_X emission limit is 289 ng/J (0.67 lb/MMBtu) and a maximum of 81 percent of the total inlet air provided for combustion shall be provided to the reducing zone of the C.AOG incinerator.

(3) *Emission monitoring.* (i) The percent of total inlet air provided to the reducing zone shall be determined at least every 15 minutes by measuring the air flow of all the air entering the reducing zone and the air flow of all the air entering the oxidation zone, and compliance with the percentage of total inlet air that is provided to the reducing zone shall be determined on a 3-hour average basis.

(ii) The NO_X emission limit shall be determined by the compliance and performance test methods and procedures for NO_X in §60.46b(i).

(iii) The monitoring of the NO_X emission limit shall be performed in accordance with §60.48b.

(4) *Reporting and recordkeeping requirements.* (i) The owner or operator of the C.AOG incinerator shall submit a report on any excursions from the limits required by paragraph (a)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the C.AOG incinerator shall keep records of the monitoring required by paragraph (a)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner of operator of the C.AOG incinerator shall perform all the applicable reporting and recordkeeping requirements of this section.

(t) Facility-specific NO_X standard for Rohm and Haas Kentucky Incorporated's Boiler No. 100 located in Louisville, Kentucky:

(1) *Definitions.*

Air ratio control damper is defined as the part of the low NO_X burner that is adjusted to control the split of total combustion air delivered to the reducing and oxidation portions of the combustion flame.

Flue gas recirculation line is defined as the part of Boiler No. 100 that recirculates a portion of the boiler flue gas back into the combustion air.

(2) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the NO_X emission limit for fossil fuel in § 60.44b(a) applies.

(ii) When fossil fuel and chemical byproduct waste are simultaneously combusted, the NO_X emission limit is 473 ng/J (1.1 lb/MMBtu), and the air ratio control damper tee handle shall be at a minimum of 5 inches (12.7 centimeters) out of the boiler, and the flue gas recirculation line shall be operated at a minimum of 10 percent open as indicated by its valve opening position indicator.

(3) *Emission monitoring for nitrogen oxides.* (i) The air ratio control damper tee handle setting and the flue gas recirculation line valve opening position indicator setting shall be recorded during each 8-hour operating shift.

(ii) The NO_X emission limit shall be determined by the compliance and performance test methods and procedures for NO_X in § 60.46b.

(iii) The monitoring of the NO_X emission limit shall be performed in accordance with § 60.48b.

(4) *Reporting and recordkeeping requirements.* (i) The owner or operator of Boiler No. 100 shall submit a report on any excursions from the limits required by paragraph (b)(2) of this section to the Administrator with the quarterly report required by § 60.49b(i).

(ii) The owner or operator of Boiler No. 100 shall keep records of the monitoring required by paragraph (b)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner of operator of Boiler No. 100 shall perform all the applicable reporting and recordkeeping requirements of § 60.49b.

(u) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* (1) This paragraph (u) applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia (''site'') and only to the natural gas-fired boilers installed as part of the powerhouse conversion required pursuant to 40 CFR 52.2454(g). The requirements of this paragraph shall apply, and the requirements of §§ 60.40b through 60.49b(t) shall not apply, to the natural gas-fired boilers installed pursuant to 40 CFR 52.2454(g).

(i) The site shall equip the natural gas-fired boilers with low NO_X technology.

(ii) The site shall install, calibrate, maintain, and operate a continuous monitoring and recording system for measuring NO_X emissions discharged to the atmosphere and opacity using a continuous emissions monitoring system or a predictive emissions monitoring system.

(iii) Within 180 days of the completion of the powerhouse conversion, as required by 40 CFR 52.2454, the site shall perform a performance test to quantify criteria pollutant emissions.

(2) [Reserved]

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_X and/or opacity in lieu of submitting the written reports required under paragraphs (h), (i), (j), (k) or (l) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

(x) Facility-specific NO_X standard for Weyerhaeuser Company's No. 2 Power Boiler located in New Bern, North Carolina:

(1) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted,

the NO_X emission limit for fossil fuel in §60.44b(a) applies.

(ii) When fossil fuel and chemical by-product waste are simultaneously combusted, the NO_X emission limit is 215 ng/J (0.5 lb/MMBtu).

(2) *Emission monitoring for nitrogen oxides.* (i) The NO_X emissions shall be determined by the compliance and performance test methods and procedures for NO_X in §60.46b.

(ii) The monitoring of the NO_X emissions shall be performed in accordance with §60.48b.

(3) *Reporting and recordkeeping requirements.* (i) The owner or operator of the No. 2 Power Boiler shall submit a report on any excursions from the limits required by paragraph (x)(2) of this section to the Administrator with the quarterly report required by §60.49b(i).

(ii) The owner or operator of the No. 2 Power Boiler shall keep records of the monitoring required by paragraph (x)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the No. 2 Power Boiler shall perform all the applicable reporting and recordkeeping requirements of §60.49b.

(y) Facility-specific NO_X standard for INEOS USA's AOGI located in Lima, Ohio:

(1) *Standard for NO_X.* (i) When fossil fuel alone is combusted, the NO_X emission limit for fossil fuel in §60.44b(a) applies.

(ii) When fossil fuel and chemical by-product/waste are simultaneously combusted, the NO_X emission limit is 645 ng/J (1.5 lb/MMBtu).

(2) *Emission monitoring for NO_X.* (i) The NO_X emissions shall be determined by the compliance and performance test methods and procedures for NO_X in §60.46b.

(ii) The monitoring of the NO_X emissions shall be performed in accordance with §60.48b.

(3) *Reporting and recordkeeping requirements.* (i) The owner or operator of the AOGI shall submit a report on any excursions from the limits required by paragraph (y)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the AOGI shall keep records of the monitoring required by paragraph (y)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner or operator of the AOGI shall perform all the applicable reporting and recordkeeping requirements of this section.

[72 FR 32742, June 13, 2007, as amended at 74 FR 5089, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

SOURCE: 72 FR 32759, June 13, 2007, unless otherwise noted.

§60.40c Applicability and delegation of authority.

(a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under §60.14.

(e) Affected facilities (*i.e.* heat recovery steam generators and fuel heaters) that are associated with stationary

combustion turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators, fuel heaters, and other affected facilities that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator, fuel heater, or other affected facility is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(f) Any affected facility that meets the applicability requirements of and is subject to subpart AAAA or subpart CCCC of this part is not subject to this subpart.

(g) Any facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not subject to this subpart.

(h) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_X standards under this subpart and the SO_2 standards under subpart J or subpart Ja of this part, as applicable.

(i) Temporary boilers are not subject to this subpart.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (*i.e.*, the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see §60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see §60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see §60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see §60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see §60.17).

Dry flue gas desulfurization technology means a SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.42c Standard for sulfur dioxide (SO_2).

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of

an affected facility that combusts only coal shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts only coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is fired with coal refuse, the affected facility subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO_2 emissions limit or the 90 percent SO_2 reduction requirement specified in paragraph (a) of this section and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO_2 emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 50 percent (0.50) of the potential SO_2 emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 260 ng/J (0.60 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO_2 reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).

(1) Affected facilities that have a heat input capacity of 22 MW (75 MMBtu/h) or less;

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area; or

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

(d) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first,

no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the following:

(1) The percent of potential SO_2 emission rate or numerical SO_2 emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel;

(ii) Has a heat input capacity greater than 22 MW (75 MMBtu/h); and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s = \frac{(K_a H_a + K_b H_b + K_c H_c)}{(H_a + H_b + H_c)}$$

Where:

E_s = SO_2 emission limit, expressed in ng/J or lb/MMBtu heat input;

K_a = 520 ng/J (1.2 lb/MMBtu);

K_b = 260 ng/J (0.60 lb/MMBtu);

K_c = 215 ng/J (0.50 lb/MMBtu);

H_a = Heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [MMBtu];

H_b = Heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (MMBtu); and

H_c = Heat input from the combustion of oil, in J (MMBtu).

(f) Reduction in the potential SO_2 emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO_2 emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO_2 control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), (3), or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).

(3) Coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(i) The SO_2 emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas

turbines, internal combustion engines, and kilns.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§60.43c Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph (c).

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e)(1) On and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2), (e)(3), and (e)(4) of this section.

(2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005,

may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(4) An owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under § 60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO_2 emissions is not subject to the PM limit in this section.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) of this section and § 60.8, compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c is based on the average percent reduction and the average SO_2 emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO_2 emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 of appendix A of this part are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average SO_2 emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS. Method 19 of appendix A of this part shall be used to calculate E_{ao} when using daily fuel sampling or Method 6B of appendix A of this part.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E_{ho} ($E_{ho}o$) is used in Equation 19–19 of Method 19 of appendix A of this part to compute the adjusted E_{ao} ($E_{ao}o$). The $E_{ho}o$ is computed using the following formula:

$$E_{ho}o = \frac{E_{ho} - E_w\left(1 - X_k\right)}{X_k}$$

Where:

$E_{ho}o$ = Adjusted E_{ho}, ng/J (lb/MMBtu);

E_{ho} = Hourly SO_2 emission rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume $E_w = 0$.

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(2) The owner or operator of an affected facility that qualifies under the provisions of §60.42c(c) or (d) (where percent reduction is not required) does not have to measure the parameters E_w or X_k if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19 of appendix A of this part.

(f) Affected facilities subject to the percent reduction requirements under §60.42c(a) or (b) shall determine compliance with the SO_2 emission limits under §60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO_2 emission rate is computed using the following formula:

$$\%P_s = 100\left(1 - \frac{\%R_g}{100}\right)\left(1 - \frac{\%R_f}{100}\right)$$

Where:

$\%P_s$ = Potential SO_2 emission rate, in percent;

$\%R_g$ = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$ = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_g o$) is computed from $E_{ao}o$ from paragraph (e)(1) of this section and an adjusted average SO_2 inlet rate ($E_{ai}o$) using the following formula:

$$\%R_g o = 100\left(1 - \frac{E_{ao}^{o}}{E_{ai}^{o}}\right)$$

Where:

$\%R_g o$ = Adjusted $\%R_g$, in percent;

$E_{ao}o$ = Adjusted E_{ao}, ng/J (lb/MMBtu); and

$E_{ai}o$ = Adjusted average SO_2 inlet rate, ng/J (lb/MMBtu).

(ii) To compute $E_{ai}o$, an adjusted hourly SO_2 inlet rate ($E_{hi}o$) is used. The $E_{hi}o$ is computed using the following formula:

$$E_{hi}o = \frac{E_{hi} - E_w\left(1 - X_k\right)}{X_k}$$

Where:

$E_{hi}o$ = Adjusted E_{hi}, ng/J (lb/MMBtu);

E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume $E_w = 0$; and

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under §60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial

tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in § 60.48c(f), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or E_{ho} pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) of this section.

(1) Method 1 of appendix A of this part shall be used to select the sampling site and the number of traverse sampling points.

(2) Method 3A or 3B of appendix A–2 of this part shall be used for gas analysis when applying Method 5 or 5B of appendix A–3 of this part or 17 of appendix A–6 of this part.

(3) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:

(i) Method 5 of appendix A of this part may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 of appendix A of this part may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B of appendix A of this part may be used in Method 17 of appendix A of this part only if Method 17 of appendix A of this part is used in conjunction with a wet scrubber system. Method 17 of appendix A of this part shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part may be used in conjunction with a wet scrubber system.

(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(5) For Method 5 or 5B of appendix A of this part, the temperature of the

sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320±25 °F).

(6) For determination of PM emissions, an oxygen (O_2) or carbon dioxide (CO_2) measurement shall be obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.

(7) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rates expressed in ng/J (lb/MMBtu) heat input shall be determined using:

(i) The O_2 or CO_2 measurements and PM measurements obtained under this section, (ii) The dry basis F factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.

(8) Method 9 of appendix A–4 of this part shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under §60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(c) In place of PM testing with Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall install, calibrate, maintain, and operate a CEMS and shall comply with the requirements specified in paragraphs (c)(1) through (c)(14) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with §60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under §60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under §60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (d) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.

(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.

(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraph (c)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (c)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic

averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (c)(7) of this section are not met.

(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A–3 of this part or Method 17 of appendix A–6 of this part shall be used; and

(ii) For O2 (or CO_2), Method 3A or 3B of appendix A–2 of this part, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.

(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in § 60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.*, reference method) data and performance test (*i.e.*, compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/ert tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

(d) The owner or operator of an affected facility seeking to demonstrate compliance under § 60.43c(e)(4) shall follow the applicable procedures under § 60.48c(f). For residual oil-fired affected facilities, fuel supplier certifications are only allowed for facilities with heat input capacities between 2.9 and 8.7 MW (10 to 30 MMBtu/h).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.46c Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2 emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2 concentrations and either O_2 or CO_2 concentrations at the outlet of the SO_2 control device (or the outlet of the steam generating unit if no SO_2 control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c shall measure SO_2 concentrations and either O_2 or CO_2 concentrations at both the inlet and outlet of the SO_2 control device.

(b) The 1-hour average SO_2 emission rates measured by a CEMS shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO_2 emission rate must be based on at least 30 minutes of operation, and shall be calculated using the data points required under § 60.13(h)(2). Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.

(3) For affected facilities subject to the percent reduction requirements under §60.42c, the span value of the SO_2 CEMS at the inlet to the SO_2 control device shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted, and the span value of the SO_2 CEMS at the outlet from the SO_2 control device shall be 50 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of §60.42c, the span value of the SO_2 CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by using Method 6B of appendix A of this part. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B of appendix A of this part shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B of appendix A of this part may be used in lieu of CEMS to measure SO_2 at the inlet or outlet of the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in §3.2 and the applicable procedures in section 7 of Performance Specification 2 of appendix B of this part. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 of appendix A of this part or Methods 6C and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the

stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described under § 60.48c(f), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

§ 60.47c Emission monitoring for particulate matter.

(a) Except as provided in paragraphs (c), (d), (e), and (f) of this section, the owner or operator of an affected facility combusting coal, oil, or wood that is subject to the opacity standards under § 60.43c shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility subject to an opacity standard in § 60.43c(c) that is not required to use a COMS due to paragraphs (c), (d), (e), or (f) of this section that elects not to use a COMS shall conduct a performance test using Method 9 of appendix A–4 of this part and the procedures in § 60.11 to demonstrate compliance with the applicable limit in § 60.43c by April 29, 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later, and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. The observation period for Method 9 of appendix A–4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.

(1) Except as provided in paragraph (a)(2) and (a)(3) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A–4 of this part performance tests using the procedures in paragraph (a) of this section according to the applicable schedule in paragraphs (a)(1)(i) through (a)(1)(iv) of this section, as determined by the most recent Method 9 of appendix A–4 of this part performance test results.

(i) If no visible emissions are observed, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(ii) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A–4 of this part performance test must be

completed within 45 calendar days from the date that the most recent performance test was conducted.

(2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A–7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.

(i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A–7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (*i.e.* , 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (*i.e.*, 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (*i.e.*, 90 seconds) or conduct a new Method 9 of appendix A–4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in §60.45c(a)(8).

(ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A–4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A–4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS ''Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.'' This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(b) All COMS shall be operated in accordance with the applicable procedures under Performance Specification 1 of appendix B of this part. The span value of the opacity COMS shall be between 60 and 80 percent.

(c) Owners and operators of an affected facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur and/or liquid or gaseous fuels with potential sulfur dioxide emission rates of 26 ng/J (0.060 lb/MMBtu) heat input or less and that do not use a post-combustion technology to reduce SO2 or PM emissions and that are subject to an opacity standard in §60.43c(c) are not required to operate a COMS if they follow the applicable procedures in §60.48c(f).

(d) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in §60.45c(c). The CEMS specified in paragraph §60.45c(c) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(e) Owners and operators of an affected facility that is subject to an opacity standard in § 60.43c(c) and that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2, or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur, and is operated such that emissions of CO discharged to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis is not required to operate a COMS. Owners and operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (e)(1) through (4) of this section; or

(1) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.

(i) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in § 60.58b(i)(3) of subpart Eb of this part.

(ii) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(iii) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).

(iv) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(2) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.

(3) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.

(4) You must record the CO measurements and calculations performed according to paragraph (e) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.

(f) An owner or operator of an affected facility that is subject to an opacity standard in § 60.43c(c) is not required to operate a COMS provided that the affected facility meets the conditions in either paragraphs (f)(1), (2), or (3) of this section.

(1) The affected facility uses a fabric filter (baghouse) as the primary PM control device and, the owner or operator operates a bag leak detection system to monitor the performance of the fabric filter according to the requirements in section § 60.48Da of this part.

(2) The affected facility uses an ESP as the primary PM control device, and the owner or operator uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the requirements in section § 60.48Da of this part.

(3) The affected facility burns only gaseous fuels and/or fuel oils that contain no greater than 0.5 weight percent sulfur, and the owner or operator operates the unit according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures

and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under §60.48c(c).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B of this part.

(c) In addition to the applicable requirements in §60.7, the owner or operator of an affected facility subject to the opacity limits in §60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator

(d) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO_2 emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO_2 emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2 or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of appendix B of this part.

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier;

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c; and

(iii) The sulfur content or maximum sulfur content of the oil.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant,

at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(4) For other fuels:

(i) The name of the supplier of the fuel;

(ii) The potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input; and

(iii) The method used to determine the potential sulfur emissions rate of the fuel.

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in § 60.48c(f) to demonstrate compliance with the SO_2 standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in § 60.42C to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

(h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

Subpart E—Standards of Performance for Incinerators

§ 60.50 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each incinerator of more than 45 metric tons per day charging rate (50 tons/day), which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

(c) Any facility covered by subpart Cb, Eb, AAAA, or BBBB of this part is not covered by this subpart.

(d) Any facility covered by an EPA approved State section 111(d)/129 plan implementing subpart Cb or BBBB of this part is not covered by this subpart.

(e) Any facility covered by subpart FFF or JJJ of part 62 of this title (Federal section 111(d)/129 plan implementing subpart Cb or BBBB of this part) is not covered by this subpart.

[42 FR 37936, July 25, 1977, as amended at 71 FR 27335, May 10, 2006]

§ 60.51 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

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

(b) *Solid waste* means refuse, more than 50 percent of which is municipal type waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustibles, and noncombustible materials such as glass and rock.

(c) *Day* means 24 hours.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20792, June 14, 1974]

§ 60.52 Standard for particulate matter.

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator subject to the provisions of this part shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.18 g/dscm (0.08 gr/dscf) corrected to 12 percent CO_2.

[39 FR 20792, June 14, 1974, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.53 Monitoring of operations.

(a) The owner or operator of any incinerator subject to the provisions of this part shall record the daily charging rates and hours of operation.

§ 60.54 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standard in § 60.52 as follows:

(1) The concentration (c_{12}) of particulate matter, corrected to 12 percent CO_2, shall be computed for each run using the following equation:

$$c_{12} = c_s \, (12/\%CO_2)$$

where:

c_{12}=concentration of particulate matter, corrected to 12 percent CO_2, g/dscm (gr/dscf).

c_s=concentration of particulate matter, g/dscm (gr/dscf).

$\%CO_2$=CO_2 concentration, percent dry basis.

(2) Method 5 shall be used to determine the particulate matter concentration (c_s). The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3B shall be used to determine CO_2 concentration ($\%CO_2$).

(i) The CO_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the CO_2 traverse points may be reduced to 12 if Method 1 is used to locate the 12 CO_2 traverse points. If individual CO_2 samples are taken at each traverse point, the CO_2 concentration ($\%CO_2$) used in the correction equation shall be the arithmetic mean of the sample CO_2 concentrations at all traverse points.

(ii) If sampling is conducted after a wet scrubber, an ''adjusted'' CO_2 concentration [$(\%CO_2)_{adj}$], which accounts for the effects of CO_2 absorption and dilution air, may be used instead of the CO_2 concentration determined in this paragraph. The adjusted CO_2 concentration shall be determined by either of the procedures in paragraph (c) of this section.

(c) The owner or operator may use either of the following procedures to determine the adjusted CO_2 concentration.

(1) The volumetric flow rates at the inlet and outlet of the wet scrubber and the inlet CO_2 concentration may be used to determine the adjusted CO_2

concentration [$(\%CO_2)_{adj}$] using the following equation:

$$(\%CO_2)_{adj}=(\%CO_2)_{di}\ (Q_{di}/Q_{do})$$

where:

$(\%CO_2)_{adj}$=adjusted outlet CO_2 concentration, percent dry basis.

$(\%CO_2)_{di}$=CO_2 concentration measured before the scrubber, percent dry basis.

Q_{di}=volumetric flow rate of effluent gas before the wet scrubber, dscm/min (dscf/min).

Q_{do}=volumetric flow rate of effluent gas after the wet scrubber, dscm/min (dscf/min).

(i) At the outlet, Method 5 is used to determine the volumetric flow rate (Q_{do}) of the effluent gas.

(ii) At the inlet, Method 2 is used to determine the volumetric flow rate (Q_{di}) of the effluent gas as follows: Two full velocity traverses are conducted, one immediately before and one immediately after each particulate run conducted at the outlet, and the results are averaged.

(iii) At the inlet, the emission rate correction factor, integrated sampling and analysis procedure of Method 3B is used to determine the CO_2 concentration [$(\%CO_2)_{di}$] as follows: At least nine sampling points are selected randomly from the velocity traverse points and are divided randomly into three sets, equal in number of points; the first set of three or more points is used for the first run, the second set for the second run, and the third set for the third run. The CO_2 sample is taken simultaneously with each particulate run being conducted at the outlet, by traversing the three sampling points (or more) and sampling at each point for equal increments of time.

(2) Excess air measurements may be used to determine the adjusted CO_2 concentration [$(\%CO_2)_{adj}$] using the following equation:

$$(\%CO_2)_{adj}=(\%CO_2)_{di}\ [(100+\%EA_i)/(100+\%EA_o)]$$

where:

$(\%CO_2)_{adj}$=adjusted outlet CO_2 concentration, percent dry basis.

$(\%CO_2)_{di}$=CO_2 concentration at the inlet of the wet scrubber, percent dry basis.

$\%EA_i$=excess air at the inlet of the scrubber, percent.

$\%EA_o$=excess air at the outlet of the scrubber, percent.

(i) A gas sample is collected as in paragraph (c)(1)(iii) of this section and the gas samples at both the inlet and outlet locations are analyzed for CO_2, O_2, and N_2.

(ii) Equation 3B–3 of Method 3B is used to compute the percentages of excess air at the inlet and outlet of the wet scrubber.

[54 FR 6665, Feb. 14, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61753, Oct. 17, 2000]

Subpart Ea—Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After December 20, 1989 and on or Before September 20, 1994

SOURCE: 56 FR 5507, Feb. 11, 1991, unless otherwise noted.

§ 60.50a Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each municipal waste combustor unit with a municipal waste combustor unit capacity greater than 225 megagrams per day (250 tons per day) of municipal solid waste for which construction, modification, or reconstruction is commenced as specified in paragraphs (a)(1) and (a)(2) of this section.

(1) Construction is commenced after December 20, 1989 and on or before September 20, 1994.

(2) Modification or reconstruction is commenced after December 20, 1989 and on or before June 19, 1996.

(b) [Reserved]

(c) Any unit combusting a single-item waste stream of tires is not subject to this subpart if the owner or operator of the unit:

(1) Notifies the Administrator of an exemption claim; and

(2) Provides data documenting that the unit qualifies for this exemption.

(d) Any cofired combustor, as defined under § 60.51a, located at a plant that meets the capacity specifications in paragraph (a) of this section is not subject to this subpart if the owner or operator of the cofired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides a copy of the federally enforceable permit (specified in the definition of cofired combustor in this section); and

(3) Keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.

(e) Any cofired combustor that is subject to a federally enforceable permit limiting the operation of the combustor to no more than 225 megagrams per day (250 tons per day) of municipal solid waste is not subject to this subpart.

(f) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under subpart Cb are not considered a modification or reconstruction and do not result in an existing municipal waste combustor unit becoming subject to this subpart.

(g) A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to this subpart if the owner or operator of the facility notifies the Administrator of an exemption claim and provides data documenting that the facility qualifies for this exemption.

(h) A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to this subpart if the owner or operator of the facility notifies the Administrator of an exemption claim and provides data documenting that the facility qualifies for this exemption.

(i) Any unit required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(j) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this subpart.

(k) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit (as defined in § 60.51a) are not subject to this subpart if the owner or operator of the plastics/rubber recycling unit keeps records of: the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this subpart.

(l) The following authorities shall be retained by the Administrator and not transferred to a State:

None.

(m) This subpart shall become effective on August 12, 1991.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65384, Dec. 19, 1995]

§ 60.51a Definitions.

ASME means the American Society of Mechanical Engineers.

Batch MWC means an MWC unit designed such that it cannot combust MSW continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed while combustion is occurring.

Bubbling fluidized bed combustor means a fluidized bed combustor in which the majority of the bed material remains in a fluidized state in the primary combustion zone.

Calendar quarter means a consecutive 3-month period (nonoverlapping) beginning on January 1, April 1, July 1, and October 1.

Chief facility operator means the person in direct charge and control of the operation of an MWC and who is responsible for daily on-site supervision,

technical direction, management, and overall performance of the facility.

Circulating fluidized bed combustor means a fluidized bed combustor in which the majority of the fluidized bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include yard waste, which is defined elsewhere in this section, or construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles), which are exempt from the definition of municipal solid waste in this section.

Cofired combustor means a unit combusting municipal solid waste with nonmunicipal solid waste fuel (e.g., coal, industrial process waste) and subject to a federally enforceable permit limiting the unit to combusting a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste as measured on a calendar quarter basis.

Continuous emission monitoring system or *CEMS* means a monitoring system for continuously measuring the emissions of a pollutant from an affected facility.

Continuous monitoring system means the total equipment used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Dioxin/furan means total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Federally-enforceable means all limitations and conditions that are enforceable by the Administrator including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Four-hour block average or *4-hour block average* means the average of all hourly emission rates when the affected facility is operating and combusting MSW measured over 4-hour periods of time from 12 midnight to 4 a.m., 4 a.m. to 8 a.m., 8 a.m. to 12 noon, 12 noon to 4 p.m., 4 p.m. to 8 p.m., and 8 p.m. to 12 midnight.

Large municipal waste combustor plant means a municipal waste combustor plant with a municipal waste combustor aggregate plant capacity for affected facilities that is greater than 225 megagrams per day (250 tons per day) of municipal solid waste.

Mass burn refractory municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, this includes combustors with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a waterwall furnace.

Maximum demonstrated municipal waste combustor unit load means the highest 4-hour arithmetic average municipal waste combustor unit load achieved during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under §60.53a.

Maximum demonstrated particulate matter control device temperature means the highest 4-hour arithmetic average flue gas temperature measured at the particulate matter control device inlet during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under §60.53a.

Modification or *modified municipal waste combustor unit* means a municipal waste combustor unit to which changes have been made if the cumulative cost of the changes, over the life of the unit, exceed 50 percent of the original cost of construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs; or any physical change

in the municipal waste combustor unit or change in the method of operation of the municipal waste combustor unit increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111. Increases in the amount of any air pollutant emitted by the municipal waste combustor unit are determined at 100-percent physical load capability and downstream of all air pollution control devices, with no consideration given for load restrictions based on permits or other nonphysical operational restrictions.

Modular excess air MWC means a combustor that combusts MSW and that is not field-erected and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved air MWC means a combustor that combusts MSW and that is not field-erected and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* or *MSW* means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes include:

(1) Yard waste;

(2) Refuse-derived fuel; and

(3) Motor vehicle maintenance materials limited to vehicle batteries and tires except as specified in § 60.50a(c).

Municipal waste combustor, *MWC*, or *municipal waste combustor unit:* (1) Means any setting or equipment that combusts solid, liquid, or gasified MSW including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam-generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Municipal waste combustors do not include pyrolysis/combustion units located at plastics/ rubber recycling units (as specified in § 60.50a(k) of this section). Municipal waste combustors do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of an MWC are defined as follows. The MWC unit includes, but is not limited to, the MSW fuel feed system, grate system, flue gas system, bottom ash system, and the combustor water system. The MWC boundary starts at the MSW pit or hopper and extends through:

(i) The combustor flue gas system, which ends immediately following the heat recovery equipment or, if there is no heat recovery equipment, immediately following the combustion chamber;

(ii) The combustor bottom ash system, which ends at the truck loading station or similar ash handling equipment that transfer the ash to final disposal, including all ash handling systems that are connected to the bottom ash handling system; and

(iii) The combustor water system, which starts at the feed water pump and ends at the piping exiting the steam drum or superheater.

(3) The MWC unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine generator set.

Municipal waste combustor plant means one or more MWC units at the same location for which construction, modification, or reconstruction is commenced after December 20, 1989 and on or before September 20, 1994.

Municipal waste combustor plant capacity means the aggregate MWC unit capacity of all MWC units at an MWC plant for which construction, modification, or reconstruction of the units commenced after December 20, 1989 and on or before September 20, 1994. Any MWC units for which construction, modification, or reconstruction is commenced on or before December 20, 1989 or after September 20, 1994 are not included for determining applicability under this subpart.

Municipal waste combustor unit capacity means the maximum design charging rate of an MWC unit expressed in megagrams per day (tons per day) of MSW combusted, calculated according to the procedures under §60.58a(j). Municipal waste combustor unit capacity is calculated using a design heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound) for MSW. The calculational procedures under §60.58a(j) include procedures for determining MWC unit capacity for continuous and batch feed MWC's.

Municipal waste combustor unit load means the steam load of the MWC unit measured as specified in §60.58a(h)(6).

MWC acid gases means all acid gases emitted in the exhaust gases from MWC units including, but not limited to, sulfur dioxide and hydrogen chloride gases.

MWC metals means metals and metal compounds emitted in the exhaust gases from MWC units.

MWC organics means organic compounds emitted in the exhaust gases from MWC units and includes total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Particulate matter means total particulate matter emitted from MWC units as measured by Method 5 (see §60.58a).

Plastics/rubber recycling unit means an integrated processing unit where plastics, rubber, and/or rubber tires are the only feed materials (incidental contaminants may be included in the feed materials) and they are processed into a chemical plant feedstock or petroleum refinery feedstock, where the feedstock is marketed to and used by a chemical plant or petroleum refinery as input feedstock. The combined weight of the chemical plant feedstock and petroleum refinery feedstock produced by the plastics/rubber recycling unit on a calendar quarter basis shall be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires processed by the plastics/rubber recycling unit on a calendar quarter basis. The plastics, rubber, and/or rubber tire feed materials to the plastics/rubber recycling unit may originate from the separation or diversion of plastics, rubber, or rubber tires from MSW or industrial solid waste, and may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards. The plastics, rubber, and rubber tire feed materials to the plastics/rubber recycling unit may contain incidental contaminants (e.g., paper labels on plastic bottles, metal rings on plastic bottle caps, etc.).

Potential hydrogen chloride emission rate means the hydrogen chloride emission rate that would occur from combustion of MSW in the absence of any hydrogen chloride emissions control.

Potential sulfur dioxide emission rate means the sulfur dioxide emission rate that would occur from combustion of MSW in the absence of any sulfur dioxide emissions control.

Pulverized coal/refuse-derived fuel mixed fuel-fired combustor or *pulverized coal/RDF mixed fuel-fired combustor* means a combustor that fires coal and RDF simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is fired in suspension. This includes both conventional pulverized coal and micropulverized coal.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids through the heating of MSW, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.

Reconstruction means rebuilding an MWC unit for which the cumulative costs of the construction over the life of the unit exceed 50 percent of the

original cost of construction and installation of the unit (not including any cost of land purchased in connection with such construction or installation) updated to current costs (current dollars).

Refractory unit or *refractory wall furnace* means a combustion unit having no energy recovery (e.g., via a waterwall) in the furnace (i.e., radiant heat transfer section) of the combustor.

Refuse-derived fuel or *RDF* means a type of MSW produced by processing MSW through shredding and size classification.

This includes all classes of RDF including low density fluff RDF through densified RDF and RDF fuel pellets.

RDF stoker means a steam generating unit that combusts RDF in a semi-suspension firing mode using air-fed distributors.

Same location means the same or contiguous property that is under common ownership or control, including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof, including any municipality or other governmental unit, or any quasi-governmental authority (e.g., a public utility district or regional waste disposal authority).

Shift supervisor means the person in direct charge and control of the operation of an MWC and who is responsible for on-site supervision, technical direction, management, and overall performance of the facility during an assigned shift.

Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor or *spreader stoker coal/RDF mixed fuel-fired combustor* means a combustor that fires coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions means a temperature of 20 °C (68 °F) and a pressure of 101.3 kilopascals (29.92 inches of mercury).

Twenty-four hour daily average or *24-hour daily average* means the arithmetic or geometric mean (as specified in § 60.58a (e), (g), or (h) as applicable) of all hourly emission rates when the affected facility is operating and firing MSW measured over a 24-hour period between 12 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or ''pressure-treated.'' Pressure-treating compounds include, but are not limited to, chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a combustion unit having energy (heat) recovery in the furnace (i.e., radiant heat transfer section) of the combustor.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs that are generated by residential, commercial/retail, institutional, and/or industrial sources as part of maintenance activities associated with yards or other private or public lands. Yard waste does not include construction, renovation, and demolition wastes, which are exempt from the definition of MSW in this section. Yard waste does not include clean wood, which is exempt from the definition of MSW in this section.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65384, Dec. 19, 1995; 65 FR 61753, Oct. 17, 2000]

§ 60.52a Standard for municipal waste combustor metals.

(a) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of 34 milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot), corrected to 7 percent oxygen (dry basis).

(b) On and after the date on which the initial compliance test is completed or is required to be completed

under § 60.8, no owner or operator of an affected facility subject to the particulate matter emission limit under paragraph (a) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 10 percent opacity (6-minute average).

(c) [Reserved]

§ 60.53a Standard for municipal waste combustor organics.

(a) [Reserved]

(b) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan emissions that exceed 30 nanograms per dry standard cubic meter (12 grains per billion dry standard cubic feet), corrected to 7 percent oxygen (dry basis).

§ 60.54a Standard for municipal waste combustor acid gases.

(a)–(b) [Reserved]

(c) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain sulfur dioxide in excess of 20 percent of the potential sulfur dioxide emission rate (80 percent reduction by weight or volume) or 30 parts per million by volume, corrected to 7 percent oxygen (dry basis), whichever is less stringent. The averaging time is specified in § 60.58a(e).

(d) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain hydrogen chloride in excess of 5 percent of the potential hydrogen chloride emission rate (95 percent reduction by weight or volume) or 25 parts per million by volume, corrected to 7 percent oxygen (dry basis), whichever is less stringent.

§ 60.55a Standard for nitrogen oxides.

On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 180 parts per million by volume, corrected to 7 percent oxygen (dry basis). The averaging time is specified under § 60.58a(g).

§ 60.56a Standards for municipal waste combustor operating practices.

(a) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause such facility to exceed the carbon monoxide standards shown in table 1.

TABLE 1—MWC OPERATING STANDARDS

MWC technology	Carbon monoxide emission limit (parts per million by volume) [1]
Mass burn waterwall	100
Mass burn refractory	100
Mass burn rotary waterwall	100
Modular starved air	50
Modular excess air	50
RDF stoker	150
Bubbling fluidized bed combustor	100
Circulating fluidized bed combustor	100
Pulverized coal/RDF mixed fuel-fired combustor	150
Spreader stoker coal/RDF mixed fuel-fird combustor	150

[1] Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen (dry basis). The averaging times are specified in § 60.58a(h).

(b) No owner or operator of an affected facility located within a large MWC plant shall cause such facility to operate at a load level greater than 110 percent of the *maximum demonstrated MWC unit load* as defined in § 60.51a. The averaging time is specified under § 60.58a(h).

(c) No owner or operator of an affected facility located within a large MWC plant shall cause such facility to operate at a temperature, measured at

the final particulate matter control device inlet, exceeding 17 °Centigrade (30 °Fahrenheit) above the *maximum demonstrated* particulate matter control device temperature as defined in § 60.51a. The averaging time is specified under § 60.58a(h).

(d) Within 24 months from the date of start-up of an affected facility or before February 11, 1993, whichever is later, each chief facility operator and shift supervisor of an affected facility located within a large MWC plant shall obtain and keep current either a provisional or operator certification in accordance with ASME QRO–1–1994 (incorporated by reference, see § 60.17) or an equivalent State-approved certification program.

(e) No owner or operator of an affected facility shall allow such affected facility located at a large MWC plant to operate at any time without a certified shift supervisor, as provided under paragraph (d) of this section, on duty at the affected facility. This requirement shall take effect 24 months after the date of start-up of the affected facility or on and after February 11, 1993, whichever is later.

(f) The owner or operator of an affected facility located within a large MWC plant shall develop and update on a yearly basis a sitespecific operating manual that shall, at a minimum, address the following elements of MWC unit operation:

(1) Summary of the applicable standards under this subpart;

(2) Description of basic combustion theory applicable to an MWC unit;

(3) Procedures for receiving, handling, and feeding MSW;

(4) MWC unit start-up, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the MWC unit within the standards established under this subpart;

(7) Procedures for responding to periodic upset or off-specification conditions;

(8) Procedures for minimizing particulate matter carryover;

(9) [Reserved]

(10) Procedures for handling ash;

(11) Procedures for monitoring MWC unit emissions; and

(12) Reporting and recordkeeping procedures.

(g) The owner or operator of an affected facility located within a large MWC plant shall establish a program for reviewing the operating manual annually with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

(h) The initial review of the operating manual, as specified under paragraph (g) of this section, shall be conducted prior to assumption of responsibilities affecting MWC unit operation by any person required to undergo training under paragraph (g) of this section. Subsequent reviews of the manual shall be carried out annually by each such person.

(i) The operating manual shall be kept in a readily accessible location for all persons required to undergo training under paragraph (g) of this section. The operating manual and records of training shall be available for inspection by EPA or its delegated enforcement agent upon request.

(j)–(k) [Reserved]

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65386, Dec. 19, 1995]

§ 60.57a [Reserved]

§ 60.58a Compliance and performance testing.

(a) The standards under this subpart apply at all times, except during periods of start-up, shutdown, or malfunction; provided, however, that the duration of start-up, shutdown, or malfunction shall not exceed 3 hours per occurrence.

(1) The start-up period commences when the affected facility begins the continuous burning of MSW and does not include any warm-up period when the affected facility is combusting only a fossil fuel or other non-MSW fuel and no MSW is being combusted.

(2) Continuous burning is the continuous, semicontinuous, or batch feeding of MSW for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation

for waste disposal or energy production. The use of MSW solely to provide thermal protection of grate or hearth during the start-up period shall not be considered to be continuous burning.

(b) The following procedures and test methods shall be used to determine compliance with the emission limits for particulate matter under §60.52a:

(1) Method 1 shall be used to select sampling site and number of traverse points.

(2) Method 3 shall be used for gas analysis.

(3) Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters (60 cubic feet). The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature of 160°±14 °Centigrade (320°±25 °Fahrenheit). An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

(4) For each Method 5 run, the emission rate shall be determined using:

(i) Oxygen or carbon dioxide measurements,

(ii) Dry basis F factor, and

(iii) Dry basis emission rate calculation procedures in Method 19.

(5) An owner or operator may request that compliance be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(6) The owner or operator of an affected facility shall conduct an initial compliance test for particulate matter and opacity as required under §60.8.

(7) Method 9 shall be used for determining compliance with the opacity limit.

(8) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) and record the output of the system on a 6-minute average basis.

(9) Following the date the initial compliance test for particulate matter is completed or is required to be completed under §60.8 for an affected facility located within a large MWC plant, the owner or operator shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous compliance test).

(10) [Reserved]

(c) [Reserved]

(d) The following procedures and test methods shall be used to determine compliance with the limits for dioxin/furan emissions under §60.53a:

(1) Method 23 shall be used for determining compliance with the dioxin/furan emission limits. The minimum sample time shall be 4 hours per test run.

(2) The owner or operator of an affected facility shall conduct an initial compliance test for dioxin/furan emissions as required under §60.8.

(3) Following the date of the initial compliance test or the date on which the initial compliance test is required to be completed under §60.8, the owner or operator of an affected facility located within a large MWC plant shall conduct a performance test for dioxin/furan emissions on an annual basis (no more than 12 calendar months following the previous compliance test).

(4) [Reserved]

(5) An owner or operator may request that compliance with the dioxin/furan emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(e) The following procedures and test methods shall be used for determining compliance with the sulfur dioxide limit under §60.54a:

(1) Method 19, section 5.4, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission rate.

(2) Method 19, section 4.3, shall be used to determine the daily geometric average sulfur dioxide emission rate.

(3) An owner or operator may request that compliance with the sulfur dioxide emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen

and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(4) The owner or operator of an affected facility shall conduct an initial compliance test for sulfur dioxide as required under § 60.8. Compliance with the sulfur dioxide emission limit and percent reduction is determined by using a CEMS to measure sulfur dioxide and calculating a 24-hour daily geometric mean emission rate and daily geometric mean percent reduction using Method 19 sections 4.3 and 5.4, as applicable, except as provided under paragraph (e)(5) of this section.

(5) For batch MWC's or MWC units that do not operate continuously, compliance shall be determined using a daily geometric mean of all hourly average values for the hours during the day that the affected facility is combusting MSW.

(6) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system.

(7) Following the date of the initial compliance test or the date on which the initial compliance test is required to be completed under § 60.8, compliance with the sulfur dioxide emission limit or percent reduction shall be determined based on the geometric mean of the hourly arithmetic average emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using: CEMS inlet and outlet data, if compliance is based on a percent reduction; or CEMS outlet data only if compliance is based on an emission limit.

(8) At a minimum, valid CEMS data shall be obtained for 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(9) The 1-hour arithmetic averages required under paragraph (e)(7) of this section shall be expressed in parts per million (dry basis) and used to calculate the 24-hour daily geometric mean emission rates. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2). At least two data points shall be used to calculate each 1-hour arithmetic average.

(10) All valid CEMS data shall be used in calculating emission rates and percent reductions even if the minimum CEMS data requirements of paragraph (e)(8) of this section are not met.

(11) The procedures under § 60.1 3 shall be followed for installation, evaluation, and operation of the CEMS.

(12) The CEMS shall be operated according to Performance Specifications 1, 2, and 3 (appendix B of part 60).

(13) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F of part 60).

(14) The span value of the CEMS at the inlet to the sulfur dioxide control device is 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the MWC unit, and the span value of the CEMS at the outlet of the sulfur dioxide control device is 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the MWC unit.

(15) When sulfur dioxide emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or Method 19 to provide as necessary valid emission data for a minimum of 75 percent of the hours per day for 75 percent of the days per month the unit is operated and combusting MSW.

(16) Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for MWC acid gases shall not be considered a *physical change in the method of operation* under 40 CFR 52.21, or under regulations approved pursuant to 40 CFR 51.166 or 40 CFR 51.165 (a) and (b).

(f) The following procedures and test methods shall be used for determining compliance with the hydrogen chloride limits under § 60.54a:

(1) The percentage reduction in the potential hydrogen chloride emissions ($\%P_{HCl}$) is computed using the following formula:

$$\%P_{HCl} = \frac{(E_i - E_o)}{E_i} \times 100$$

where:

E_i is the potential hydrogen chloride emission rate.

E_o is the hydrogen chloride emission rate measured at the outlet of the acid gas control device.

(2) Method 26 or 26A shall be used for determining the hydrogen chloride emission rate. The minimum sampling time for Method 26 or 26A shall be 1 hour.

(3) An owner or operator may request that compliance with the hydrogen chloride emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(4) The owner or operator of an affected facility shall conduct an initial compliance test for hydrogen chloride as required under §60.8.

(5) Following the date of the initial compliance test or the date on which the initial compliance test is required under §60.8, the owner or operator of an affected facility located within a large MWC plant shall conduct a performance test for hydrogen chloride on an annual basis (no more than 12 calendar months following the previous compliance test).

(6) [Reserved]

(7) Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for MWC acid gases shall not be considered a *physical change in the method of operation* under 40 CFR 52.21, or under regulations approved pursuant to 40 CFR 51.166 or 40 CFR 51.165 (a) and (b).

(g) The following procedures and test methods shall be used to determine compliance with the nitrogen oxides limit under §60.55a:

(1) Method 19, section 4.1, shall be used for determining the daily arithmetic average nitrogen oxides emission rate.

(2) An owner or operator may request that compliance with the nitrogen oxides emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(3) The owner or operator of an affected facility subject to the nitrogen oxides limit under §60.55a shall conduct an initial compliance test for nitrogen oxides as required under §60.8. Compliance with the nitrogen oxides emission standard shall be determined by using a CEMS for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission rate using Method 19, section 4.1, except as specified under paragraph (g)(4) of this section.

(4) For batch MWC's or MWC's that do not operate continuously, compliance shall be determined using a daily arithmetic average of all hourly average values for the hours during the day that the affected facility is combusting MSW.

(5) The owner or operator of an affected facility subject to the nitrogen oxides emissions limit under §60.55a shall install, calibrate, maintain, and operate a CEMS for measuring nitrogen oxides discharged to the atmosphere and record the output of the system.

(6) Following the initial compliance test or the date on which the initial compliance test is required to be completed under §60.8, compliance with the emission limit for nitrogen oxides required under §60.55a shall be determined based on the arithmetic average of the arithmetic average hourly emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using CEMS data.

(7) At a minimum valid CEMS data shall be obtained for 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(8) The 1-hour arithmetic averages required by paragraph (g)(6) of this section shall be expressed in parts per million volume (dry basis) and used to calculate the 24-hour daily arithmetic average emission rates. The 1-hour arithmetic averages shall be calculated using the data points required under

§ 60.13(b). At least two data points shall be used to calculate each 1-hour arithmetic average.

(9) All valid CEMS data must be used in calculating emission rates even if the minimum CEMS data requirements of paragraph (g)(7) of this section are not met.

(10) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(11) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F of part 60).

(12) When nitrogen oxides emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emission data calculations to determine compliance shall be made using other monitoring systems as approved by the Administrator or Method 19 to provide as necessary valid emission data for a minimum of 75 percent of the hours per day for 75 percent of the days per month the unit is operated and combusting MSW.

(h) The following procedures shall be used for determining compliance with the operating standards under § 60.56a:

(1) Compliance with the carbon monoxide emission limits in § 60.56a(a) shall be determined using a 4-hour block arithmetic average for all types of affected facilities except mass burn rotary waterwall MWC's, RDF stokers, and spreader stoker/RDF mixed fuel-fired combustors.

(2) For affected mass burn rotary waterwall MWC's, RDF stokers, and spreader stoker/RDF mixed fuel-fired combustors, compliance with the carbon monoxide emission limits in § 60.56a(a) shall be determined using a 24-hour daily arithmetic average.

(3) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring carbon monoxide at the combustor outlet and record the output of the system.

(4) The 4-hour and 24-hour daily arithmetic averages in paragraphs (h)(1) and (2) of this section shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume (dry basis). The 1-hour arithmetic averages shall be calculated using the data points generated by the CEMS. At least two data points shall be used to calculate each 1-hour arithmetic average.

(5) An owner or operator may request that compliance with the carbon monoxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(6) The following procedures shall be used to determine compliance with load level requirements under § 60.56a(b):

(i) The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam or feedwater flow in kilograms per hour (pounds per hour) on a continuous basis; and record the output of the monitor. Steam or feedwater flow shall be calculated in 4-hour block arithmetic averages.

(ii) The method included in ''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964'', Section 4 (incorporated by reference, see § 60.17) shall be used for calculating the steam (or feedwater flow) required under paragraph (h)(6)(i) of this section. The recommendations of ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971),'' chapter 4 (incorporated by reference, see § 60.17) shall be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified in (h)(6)(iii) of this section.

(iii) Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.

(iv) All signal conversion elements associated with steam (or feedwater flow) measurements must be calibrated according to the manufacturer's instructions before each dioxin/furan compliance and performance test, and at least once per year.

(v) The owner or operator of an affected facility without heat recovery shall:

(A) [Reserved]

(7) To determine compliance with the maximum particulate matter control device temperature requirements under § 60.56a(c), the owner or operator of an affected facility shall install, calibrate, maintain, and operate a device for measuring temperature of the flue gas stream at the inlet to the final particulate matter control device on a continuous basis and record the output of the device. Temperature shall be calculated in 4-hour block arithmetic averages.

(8) Maximum demonstrated MWC unit load shall be determined during the initial compliance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit under § 60.53a is achieved. Maximum demonstrated MWC unit load shall be the maximum 4-hour arithmetic average load achieved during the most recent test during which compliance with the dioxin/furan limit was achieved.

(9) The maximum demonstrated particulate matter control device temperature shall be determined during the initial compliance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit under § 60.53a is achieved. Maximum demonstrated particulate matter control device temperature shall be the maximum 4-hour arithmetic average temperature achieved at the final particulate matter control device inlet during the most recent test during which compliance with the dioxin/furan limit was achieved.

(10) At a minimum, valid CEMS data for carbon monoxide, steam or feedwater flow, and particulate matter control device inlet temperature shall be obtained 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(11) All valid data must be used in calculating the parameters specified under paragraph (h) of this section even if the minimum data requirements of paragraph (h)(10) of this section are not met.

(12) Quarterly accuracy determinations and daily calibration drift tests for carbon monoxide CEMS shall be performed in accordance with Procedure 1 (appendix F).

(i) [Reserved]

(j) The following procedures shall be used for calculating *MWC unit capacity* as defined under § 60.51a:

(1) For MWC units capable of combusting MSW continuously for a 24-hour period, MWC unit capacity, in megagrams per day (tons per day) of MSW combusted, shall be calculated based on 24 hours of operation at the maximum design charging rate. The design heating values under paragraph (j)(4) of this section shall be used in calculating the design charging rate.

(2) For batch MWC units, MWC unit capacity, in megagrams per day (tons per day) of MSW combusted, shall be calculated as the maximum design amount of MSW that can be charged per batch multiplied by the maximum number of batches that could be processed in a 24-hour period. The maximum number of batches that could be processed in a 24-hour period is calculated as 24 hours divided by the design number of hours required to process one batch of MSW, and may include fractional batches.[1] The design heating values under paragraph (j)(4) of this section shall be used in calculating the MWC unit capacity in megagrams per day (tons per day) of MSW.

(3) [Reserved]

(4) The MWC unit capacity shall be calculated using a design heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound) for all MSW.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65387, Dec. 19, 1995; 65 FR 61753, Oct. 17, 2000]

§ 60.59a Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility located at an MWC plant with a capacity greater than 225 megagrams per day (250 tons per day) shall provide notification of intent to construct and of planned initial start-

[1] For example, if one batch requires 16 hours, then 24/16, or 1.5 batches, could be combusted in a 24-hour period.

up date and the type(s) of fuels that they plan to combust in the affected facility. The MWC unit capacity and MWC plant capacity and supporting capacity calculations shall be provided at the time of the notification of construction.

(b) The owner or operator of an affected facility located within a small or large MWC plant and subject to the standards under § 60.52a, § 60.53a, § 60.54a, § 60.55a, § 60.56a, or § 60.57a shall maintain records of the following information for each affected facility for a period of at least 2 years:

(1) Calendar date.

(2) The emission rates and parameters measured using CEMS as specified under (b)(2) (i) and (ii) of this section:

(i) The following measurements shall be recorded in computer-readable format and on paper:

(A) All 6-minute average opacity levels required under § 60.58a(b).

(B) All 1 hour average sulfur dioxide emission rates at the inlet and outlet of the acid gas control device if compliance is based on a percent reduction, or at the outlet only if compliance is based on the outlet emission limit, as specified under § 60.58a(e).

(C) All 1-hour average nitrogen oxides emission rates as specified under § 60.58a(g).

(D) All 1-hour average carbon monoxide emission rates, MWC unit load measurements, and particulate matter control device inlet temperatures as specified under § 60.58a(h).

(ii) The following average rates shall be computed and recorded:

(A) All 24-hour daily geometric average percent reductions in sulfur dioxide emissions and all 24-hour daily geometric average sulfur dioxide emission rates as specified under § 60.58a(e).

(B) All 24-hour daily arithmetic average nitrogen oxides emission rates as specified under § 60.58a(g).

(C) All 4-hour block or 24-hour daily arithmetic average carbon monoxide emission rates, as applicable, as specified under § 60.58a(h).

(D) All 4-hour block arithmetic average MWC unit load levels and particulate matter control device inlet temperatures as specified under § 60.58a(h).

(3) Identification of the operating days when any of the average emission rates, percent reductions, or operating parameters specified under paragraph (b)(2)(ii) of this section or the opacity level exceeded the applicable limits, with reasons for such exceedances as well as a description of corrective actions taken.

(4) Identification of operating days for which the minimum number of hours of sulfur dioxide or nitrogen oxides emissions or operational data (carbon monoxide emissions, unit load, particulate matter control device temperature) have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(5) Identification of the times when sulfur dioxide or nitrogen oxides emission or operational data (carbon monoxide emissions, unit load, particulate matter control device temperature) have been excluded from the calculation of average emission rates or parameters and the reasons for excluding data.

(6) The results of daily sulfur dioxide, nitrogen oxides, and carbon monoxide CEMS drift tests and accuracy assessments as required under appendix F, Procedure 1.

(7) The results of all annual performance tests conducted to determine compliance with the particulate matter, dioxin/furan and hydrogen chloride limits. For all annual dioxin/furan tests, the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device temperature shall be recorded along with supporting calculations.

(8)–(15) [Reserved]

(c) Following the initial compliance test as required under §§ 60.8 and 60.58a, the owner or operator of an affected facility located within a large MWC plant shall submit the initial compliance test data, the performance evaluation of the CEMS using the applicable performance specifications in appendix B, and the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device temperature established during the dioxin/furan compliance test.

(d) [Reserved]

(e)(1) The owner or operator of an affected facility located within a large MWC plant shall submit annual compliance reports for sulfur dioxide, nitrogen oxide (if applicable), carbon monoxide, load level, and particulate matter control device temperature to the Administrator containing the information recorded under paragraphs (b)(1), (2)(ii), (4), (5), and (6) of this section for each pollutant or parameter. The hourly average values recorded under paragraph (b)(2)(i) of this section are not required to be included in the annual reports. Combustors firing a mixture of medical waste and other MSW shall also provide the information under paragraph (b)(15) of this section, as applicable, in each annual report. The owner or operator of an affected facility must submit reports semiannually once the affected facility is subject to permitting requirements under Title V of the Act.

(2) The owner or operator shall submit a semiannual report for any pollutant or parameter that does not comply with the pollutant or parameter limits specified in this subpart. Such report shall include the information recorded under paragraph (b)(3) of this section. For each of the dates reported, include the sulfur dioxide, nitrogen oxide, carbon monoxide, load level, and particulate matter control device temperature data, as applicable, recorded under paragraphs (b)(2)(ii)(A) through (D) of this section.

(3) Reports shall be postmarked no later than the 30th day following the end of the annual or semiannual period, as applicable.

(f)(1) The owner or operator of an affected facility located within a large MWC plant shall submit annual compliance reports, as applicable, for opacity. The annual report shall list the percent of the affected facility operating time for the reporting period that the opacity CEMS was operating and collecting valid data. Once the unit is subject to permitting requirements under Title V of the Act, the owner or operator of an affected facility must submit these reports semiannually.

(2) The owner or operator shall submit a semiannual report for all periods when the 6-minute average levels exceeded the opacity limit under § 60.52a. The semiannual report shall include all information recorded under paragraph (b)(3) of this section which pertains to opacity, and a listing of the 6-minute average opacity levels recorded under paragraph (b)(2)(i)(A) of this section, which exceeded the opacity limit.

(3) Reports shall be postmarked no later than the 30th day following the end of the annual of semiannual period, as applicable.

(g)(1) The owner or operator of an affected facility located within a large MWC plant shall submit reports to the Administrator of all annual performance tests for particulate matter, dioxin/furan, and hydrogen chloride as recorded under paragraph (b)(7) of this section, as applicable, from the affected facility. For each annual dioxin/furan compliance test, the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device temperature shall be reported. Such reports shall be submitted when available and in no case later than the date of required submittal of the annual report specified under paragraphs (e) and (f) of this section, or within six months of the date the test was conducted, whichever is earlier.

(2) The owner or operator shall submit a report of test results which document any particulate matter, dioxin/furan, and hydrogen chloride levels that were above the applicable pollutant limit. The report shall include a copy of the test report documenting the emission levels and shall include the corrective action taken. Such reports shall be submitted when available and in no case later than the date required for submittal of any semiannual report required in paragraphs (e) or (f) of this section, or within six months of the date the test was conducted, whichever is earlier.

(h) [Reserved]

(i) Records of CEMS data for opacity, sulfur dioxide, nitrogen oxides, and carbon monoxide, load level data, and particulate matter control device temperature data shall be maintained for at least 2 years after date of recordation and be made available for inspection upon request.

(j) Records showing the names of persons who have completed review of the operating manual, including the date

of the initial review and all subsequent annual reviews, shall be maintained for at least 2 years after date of review and be made available for inspection upon request.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65387, Dec. 19, 1995; 64 FR 7465, Feb. 12, 1999]

Subpart Eb—Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996

SOURCE: 60 FR 65419, Dec. 19, 1995, unless otherwise noted.

§ 60.50b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction, modification, or reconstruction is commenced after September 20, 1994.

(b) Any waste combustion unit that is capable of combusting more than 250 tons per day of municipal solid waste and is subject to a federally enforceable permit limiting the maximum amount of municipal solid waste that may be combusted in the unit to less than or equal to 11 tons per day is not subject to this subpart if the owner or operator:

(1) Notifies EPA of an exemption claim;

(2) Provides a copy of the federally enforceable permit that limits the firing of municipal solid waste to less than 11 tons per day; and

(3) Keeps records of the amount of municipal solid waste fired on a daily basis.

(c) An affected facility to which this subpart applies is not subject to subpart E or Ea of this part.

(d) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under subpart Cb are not considered a modification or reconstruction and do not result in an existing municipal waste combustor unit becoming subject to this subpart.

(e) A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to this subpart if the owner or operator of the facility notifies EPA of this exemption and provides data documenting that the facility qualifies for this exemption.

(f) A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to this subpart if the owner or operator of the facility notifies EPA of this exemption and provides data documenting that the facility qualifies for this exemption.

(g) Any unit combusting a single-item waste stream of tires is not subject to this subpart if the owner or operator of the unit:

(1) Notifies EPA of an exemption claim; and

(2) [Reserved]

(3) Provides data documenting that the unit qualifies for this exemption.

(h) Any unit required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(i) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this subpart.

(j) Any cofired combustor, as defined under § 60.51b, that meets the capacity specifications in paragraph (a) of this section is not subject to this subpart if the owner or operator of the cofired combustor:

(1) Notifies EPA of an exemption claim;

(2) Provides a copy of the federally enforceable permit (specified in the definition of cofired combustor in this section); and

(3) Keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.

(k) Air curtain incinerators, as defined under §60.51b, located at a plant that meet the capacity specifications in paragraph (a) of this section and that combust a fuel stream composed of 100 percent yard waste are exempt from all provisions of this subpart except the opacity limit under §60.56b, the testing procedures under §60.58b(l), and the reporting and recordkeeping provisions under §60.59b (e) and (i).

(l) Air curtain incinerators located at plants that meet the capacity specifications in paragraph (a) of this section combusting municipal solid waste other than yard waste are subject to all provisions of this subpart.

(m) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit (as defined in §60.51b) are not subject to this subpart if the owner or operator of the plastics/rubber recycling unit keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this subpart.

(n) The following authorities are retained by the Administrator of the U.S. EPA and are not transferred to a State:

(1) Approval of exemption claims in paragraphs (b), (e), (f), (g) and (j) of this section;

(2) Enforceability under Federal law of all Federally enforceable, as defined in §60.51b, limitations and conditions;

(3) Determination of compliance with the siting requirements as specified in §60.57b(a);

(4) Acceptance of relationship between carbon monoxide and oxygen as part of initial and annual performance tests as specified in §60.58b(b)(7);

(5) Approval of other monitoring systems used to obtain emissions data when data is not obtained by CEMS as specified in §60.58b(e)(14), (h)(12), (i)(11), and (n)(14), and (p)(11);

(6) Approval of a site-specific monitoring plan for the continuous emission monitoring system specified in ''60.58b(n)(13) and (o) of this section or the continuous automated sampling system specified in §60.58b(p)(10) and (q) of this section;

(7) Approval of major alternatives to test methods;

(8) Approval of major alternatives to monitoring;

(9) Waiver of recordkeeping; and

(10) Performance test and data reduction waivers under ''608(b).

(o) This subpart shall become effective June 19, 1996.

(p) Cement kilns firing municipal solid waste are not subject to this subpart.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45120, 45125, Aug. 25, 1997; 71 FR 27335, May 10, 2006]

§60.51b Definitions.

Administrator means:

(1) For approved and effective State Section 111(d)/129 plans, the Director of the State air pollution control agency, or employee of the State air pollution control agency that is delegated the authority to perform the specified task;

(2) For Federal Section 111(d)/129 plans, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by the Administrator of the EPA to perform the specified task; and

(3) For NSPS, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by

the Administrator of the EPA to perform the specified task.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which burning occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor.

Batch municipal waste combustor means a municipal waste combustor unit designed so that it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed while combustion is occurring.

Bubbling fluidized bed combustor means a fluidized bed combustor in which the majority of the bed material remains in a fluidized state in the primary combustion zone.

Calendar quarter means a consecutive 3-month period (nonoverlapping) beginning on January 1, April 1, July 1, and October 1.

Calendar year means the period including 365 days starting January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustor and who is responsible for daily onsite supervision, technical direction, management, and overall performance of the facility.

Circulating fluidized bed combustor means a fluidized bed combustor in which the majority of the fluidized bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include yard waste, which is defined elsewhere in this section, or construction, renovation, and demolition wastes (including but not limited to railroad ties and telephone poles), which are exempt from the definition of municipal solid waste in this section.

Cofired combustor means a unit combusting municipal solid waste with nonmunicipal solid waste fuel (e.g., coal, industrial process waste) and subject to a federally enforceable permit limiting the unit to combusting a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste as measured on a calendar quarter basis.

Continuous automated sampling system means the total equipment and procedures for automated sample collection and sample recovery/analysis to determine a pollutant concentration or emission rate by collecting a single or multiple integrated sample(s) of the pollutant (or diluent gas) for subsequent on-or off-site analysis; integrated sample(s) collected are representative of the emissions for the sample time as specified by the applicable requirement.

Continuous emission monitoring system means a monitoring system for continuously measuring the emissions of a pollutant from an affected facility.

Dioxin/furan means tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans.

EPA means the Administrator of the U.S. EPA or employee of the U.S. EPA who is delegated to perform the specified task.

Federally enforceable means all limitations and conditions that are enforceable by EPA including the requirements of 40 CFR part 60, 40 CFR part 61, and 40 CFR part 63, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period starting on January 1 and ending on June 30 in any year.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over 4-hour periods of time from 12:00 midnight to 4 a.m., 4 a.m. to 8 a.m., 8 a.m. to 12:00 noon, 12:00 noon to 4 p.m., 4 p.m. to 8 p.m., and 8 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustor means a field-erected combustor that combusts municipal solid

waste in a refractory wall furnace. Unless otherwise specified, this includes combustors with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a cylindrical rotary waterwall furnace or on a tumbling-tile grate.

Mass burn waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a waterwall furnace.

Materials separation plan means a plan that identifies both a goal and an approach to separate certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems. A materials separation plan may include different goals or approaches for different subareas in the service area, and may include no materials separation activities for certain subareas or, if warranted, an entire service area.

Maximum demonstrated municipal waste combustor unit load means the highest 4-hour arithmetic average municipal waste combustor unit load achieved during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under § 60.52b(c).

Maximum demonstrated particulate matter control device temperature means the highest 4-hour arithmetic average flue gas temperature measured at the particulate matter control device inlet during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under § 60.52b(c).

Modification or *modified municipal waste combustor unit* means a municipal waste combustor unit to which changes have been made after June 19, 1996 if the cumulative cost of the changes, over the life of the unit, exceed 50 percent of the original cost of construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs; or any physical change in the municipal waste combustor unit or change in the method of operation of the municipal waste combustor unit increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111. Increases in the amount of any air pollutant emitted by the municipal waste combustor unit are determined at 100-percent physical load capability and downstream of all air pollution control devices, with no consideration given for load restrictions based on permits or other nonphysical operational restrictions.

Modular excess-air municipal waste combustor means a combustor that combusts municipal solid waste and that is not field-erected and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustor means a combustor that combusts municipal solid waste and that is not field-erected and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* or *MSW* means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments

or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes include:

(1) Yard waste;

(2) Refuse-derived fuel; and

(3) Motor vehicle maintenance materials limited to vehicle batteries and tires except as specified in § 60.50b(g).

Municipal waste combustor, MWC, or *municipal waste combustor unit:* (1) Means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Municipal waste combustors do not include pyrolysis/combustion units located at a plastics/rubber recycling unit (as specified in § 60.50b(m)). Municipal waste combustors do not include cement kilns firing municipal solid waste (as specified in § 60.50b(p)). Municipal waste combustors do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal solid waste combustor are defined as follows. The municipal waste combustor unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustor water system. The municipal waste combustor boundary starts at the municipal solid waste pit or hopper and extends through:

(i) The combustor flue gas system, which ends immediately following the heat recovery equipment or, if there is no heat recovery equipment, immediately following the combustion chamber,

(ii) The combustor bottom ash system, which ends at the truck loading station or similar ash handling equipment that transfer the ash to final disposal, including all ash handling systems that are connected to the bottom ash handling system; and

(iii) The combustor water system, which starts at the feed water pump and ends at the piping exiting the steam drum or superheater.

(3) The municipal waste combustor unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set.

Municipal waste combustor acid gases means all acid gases emitted in the exhaust gases from municipal waste combustor units including, but not limited to, sulfur dioxide and hydrogen chloride gases.

Municipal waste combustor metals means metals and metal compounds emitted in the exhaust gases from municipal waste combustor units.

Municipal waste combustor organics means organic compounds emitted in the exhaust gases from municipal waste combustor units and includes tetra-through octa- chlorinated dibenzo-p-dioxins and dibenzofurans.

Municipal waste combustor plant means one or more affected facilities (as defined in § 60.50b) at the same location.

Municipal waste combustor unit capacity means the maximum charging rate of a municipal waste combustor unit expressed in tons per day of municipal solid waste combusted, calculated according to the procedures under § 60.58b(j). Section 60.58b(j) includes procedures for determining municipal waste combustor unit capacity for continuous and batch feed municipal waste combustors.

Municipal waste combustor unit load means the steam load of the municipal waste combustor unit measured as specified in § 60.58b(i)(6).

Particulate matter means total particulate matter emitted from municipal waste combustor units as measured by EPA Reference Method 5 (see § 60.58b(c)).

Plastics/rubber recycling unit means an integrated processing unit where plastics, rubber, and/or rubber tires are the

only feed materials (incidental contaminants may be included in the feed materials) and they are processed into a chemical plant feedstock or petroleum refinery feedstock, where the feedstock is marketed to and used by a chemical plant or petroleum refinery as input feedstock. The combined weight of the chemical plant feedstock and petroleum refinery feedstock produced by the plastics/rubber recycling unit on a calendar quarter basis shall be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires processed by the plastics/rubber recycling unit on a calendar quarter basis. The plastics, rubber, and/or rubber tire feed materials to the plastics/rubber recycling unit may originate from the separation or diversion of plastics, rubber, or rubber tires from MSW or industrial solid waste, and may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards. The plastics, rubber, and rubber tire feed materials to the plastics/rubber recycling unit may contain incidental contaminants (e.g., paper labels on plastic bottles, metal rings on plastic bottle caps, etc.).

Potential hydrogen chloride emission concentration means the hydrogen chloride emission concentration that would occur from combustion of municipal solid waste in the absence of any emission controls for municipal waste combustor acid gases.

Potential mercury emission concentration means the mercury emission concentration that would occur from combustion of municipal solid waste in the absence of any mercury emissions control.

Potential sulfur dioxide emissions means the sulfur dioxide emission concentration that would occur from combustion of municipal solid waste in the absence of any emission controls for municipal waste combustor acid gases.

Pulverized coal/refuse-derived fuel mixed fuel-fired combustor means a combustor that fires coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is fired in suspension. This includes both conventional pulverized coal and micropulverized coal.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids through the heating of municipal solid waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustor unit for which the reconstruction commenced after June 19, 1996, and the cumulative costs of the construction over the life of the unit exceed 50 percent of the original cost of construction and installation of the unit (not including any cost of land purchased in connection with such construction or installation) updated to current costs (current dollars).

Refractory unit or *refractory wall furnace* means a combustion unit having no energy recovery (e.g., via a waterwall) in the furnace (i.e., radiant heat transfer section) of the combustor.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including low-density fluff refuse-derived fuel through densified refuse-derived fuel and pelletized refuse-derived fuel.

Refuse-derived fuel stoker means a steam generating unit that combusts refuse-derived fuel in a semisuspension firing mode using air-fed distributors.

Same location means the same or contiguous property that is under common ownership or control including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof including any municipality or other governmental unit, or any quasi-governmental authority (e.g., a public utility district or regional waste disposal authority).

Second calendar half means the period starting July 1 and ending on December 31 in any year.

Shift supervisor means the person who is in direct charge and control of the

operation of a municipal waste combustor and who is responsible for onsite supervision, technical direction, management, and overall performance of the facility during an assigned shift.

Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor means a combustor that fires coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions means a temperature of 20 °C and a pressure of 101.3 kilopascals.

Total mass dioxin/furan or *total mass* means the total mass of tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans, as determined using EPA Reference Method 23 and the procedures specified under § 60.58b(g).

Tumbling-tile means a grate tile hinged at one end and attached to a ram at the other end. When the ram extends, the grate tile rotates around the hinged end.

Twenty-four hour daily average or *24-hour daily average* means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over a 24-hour period between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or ''pressure-treated.'' Pressure-treating compounds include, but are not limited to, chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a combustion unit having energy (heat) recovery in the furnace (i.e., radiant heat transfer section) of the combustor.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs that are generated by residential, commercial/retail, institutional, and/or industrial sources as part of maintenance activities associated with yards or other private or public lands. Yard waste does not include construction, renovation, and demolition wastes, which are exempt from the definition of municipal solid waste in this section. Yard waste does not include clean wood, which is exempt from the definition of municipal solid waste in this section.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45121, 45126, Aug. 25, 1997; 66 FR 36476, July 12, 2001; 71 FR 27335, May 10, 2006]

§ 60.52b Standards for municipal waste combustor metals, acid gases, organics, and nitrogen oxides.

(a) The limits for municipal waste combustor metals are specified in paragraphs (a)(1) through (a)(5) of this section.

(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of the limits specified in paragraph (a)(1)(i) or (a)(1)(ii) of this section.

(i) For affected facilities that commenced construction, modification, or reconstruction after September 20, 1994, and on or before December 19, 2005, the emission limit is 24 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) For affected facilities that commenced construction, modification, or reconstruction after December 19, 2005, the emission limit is 20 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(2) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 10 percent opacity (6-minute average).

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into

the atmosphere from that affected facility any gases that contain cadmium in excess of the limits specified in paragraph (a)(3)(i) or (a)(3)(ii) of this section.

(i) For affected facilities that commenced construction, modification, or reconstruction after September 20, 1994, and on or before December 19, 2005, the emission limit is 20 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) For affected facilities that commenced construction, modification, or reconstruction after December 19, 2005, the emission limit is 10 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(4) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from the affected facility any gases that contain lead in excess of the limits specified in paragraph (a)(4)(i) or (a)(4)(ii) of this section.

(i) For affected facilities that commenced construction, modification, or reconstruction after September 20, 1994, and on or before December 19, 2005, the emission limit is 200 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) For affected facilities that commenced construction, modification, or reconstruction after December 19, 2005, the emission limit is 140 micrograms per dry standard cubic meter, corrected to 7 percent oxygen.

(5) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from the affected facility any gases that contain mercury in excess of the limits specified in paragraph (a)(5)(i) or (a)(5)(ii) of this section.

(i) For affected facilities that commenced construction, modification, or reconstruction after September 20, 1994 and on or before December 19, 2005, the emission limit is 80 micrograms per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

(ii) For affected facilities that commenced construction, modification, or reconstruction after December 19, 2005, the emission limit is 50 micrograms per dry standard cubic meter, or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

(b) The limits for municipal waste combustor acid gases are specified in paragraphs (b)(1) and (b)(2) of this section.

(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain sulfur dioxide in excess of 30 parts per million by volume or 20 percent of the potential sulfur dioxide emission concentration (80-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. The averaging time is specified under § 60.58b(e).

(2) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain hydrogen chloride in excess of 25 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent.

(c) The limits for municipal waste combustor organics are specified in paragraphs (c)(1) and (c)(2) of this section.

(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility for which construction, modification or reconstruction commences on

or before November 20, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan emissions that exceed 30 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen, for the first 3 years following the date of initial startup. After the first 3 years following the date of initial startup, no owner or operator shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan total mass emissions that exceed 13 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(2) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility for which construction, modification, or reconstruction commences after November 20, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan total mass emissions that exceed 13 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(d) The limits for nitrogen oxides are specified in paragraphs (d)(1) and (d)(2) of this section.

(1) During the first year of operation after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 180 parts per million by volume, corrected to 7 percent oxygen (dry basis). The averaging time is specified under § 60.58b(h).

(2) After the first year of operation following the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 150 parts per million by volume, corrected to 7 percent oxygen (dry basis). The averaging time is specified under § 60.58b(h).

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45121, 45126, Aug. 25, 1997; 71 FR 27336, May 10, 2006]

§ 60.53b Standards for municipal waste combustor operating practices.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain carbon monoxide in excess of the emission limits specified in table 1 of this subpart.

TABLE 1—MUNICIPAL WASTE COMBUSTOR OPERATING STANDARDS

Municipal waste combustor technology	Carbon monoxide emission limit (parts per million by volume) [a]	Averaging time (hours) [b]
Mass burn waterwall	100	4
Mass burn refractory	100	4
Mass burn rotary waterwall	100	24
Modular starved air	50	4
Modular excess air	50	4
Refuse-derived fuel stoker	150	24
Bubbling fluidized bed combustor	100	4
Circulating fluidized bed combustor	100	4
Pulverized coal/refuse-derived fuel mixed fuel-fired combustor	150	4
Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor	150	24

[a] Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen (dry basis). The averaging times are specified in greater detail in § 60.58b(i).
[b] Averaging times are 4-hour or 24-hour block averages.

(b) No owner or operator of an affected facility shall cause such facility to operate at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load as defined in § 60.51b, except as specified in paragraphs (b)(1) and (b)(2) of this section. The averaging time is specified under § 60.58b(i).

(1) During the annual dioxin/furan or mercury performance test and the 2 weeks preceding the annual dioxin/furan or mercury performance test, no municipal waste combustor unit load limit is applicable if the provisions of paragraph (b)(2) of this section are met.

(2) The municipal waste combustor unit load limit may be waived in writing by the Administrator for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions. The municipal waste combustor unit load limit continues to apply, and remains enforceable, until and unless the Administrator grants the waiver.

(c) No owner or operator of an affected facility shall cause such facility to operate at a temperature, measured at the particulate matter control device inlet, exceeding 17 °C above the maximum demonstrated particulate matter control device temperature as defined in § 60.51b, except as specified in paragraphs (c)(1) and (c)(2) of this section. The averaging time is specified under § 60.58b(i). The requirements specified in this paragraph apply to each particulate matter control device utilized at the affected facility.

(1) During the annual dioxin/furan or mercury performance test and the 2 weeks preceding the annual dioxin/furan or mercury performance test, no particulate matter control device temperature limitations are applicable if the provisions of paragraph (b)(2) of this section are met.

(2) The particulate matter control device temperature limits may be waived in writing by the Administrator for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions. The temperature limits continue to apply, and remain enforceable, until and unless the Administrator grants the waiver.

(d) Paragraph (m)(2) of § 60.58b addresses treatment of activated carbon injection rate during dioxin/furan or mercury testing.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997; 71 FR 27336, May 10, 2006]

§ 60.54b Standards for municipal waste combustor operator training and certification.

(a) No later than the date 6 months after the date of startup of an affected facility or on December 19, 1996, whichever is later, each chief facility operator and shift supervisor shall obtain and maintain a current provisional operator certification from either the American Society of Mechanical Engineers [QRO–1–1994 (incorporated by reference—see § 60.17 of subpart A of this part)] or a State certification program.

(b) Not later than the date 6 months after the date of startup of an affected facility or on December 19, 1996, whichever is later, each chief facility operator and shift supervisor shall have completed full certification or shall have scheduled a full certification exam with either the American Society of Mechanical Engineers [QRO–1–1994 (incorporated by reference—see § 60.17 of subpart A of this part)] or a State certification program.

(c) No owner or operator of an affected facility shall allow the facility to be operated at any time unless one of the following persons is on duty and at the affected facility: A fully certified chief facility operator, a provisionally certified chief facility operator who is scheduled to take the full certification exam according to the schedule specified in paragraph (b) of this section, a fully certified shift supervisor, or a provisionally certified shift supervisor who is scheduled to take the full certification exam according to the schedule specified in paragraph (b) of this section.

(1) The requirement specified in paragraph (c) of this section shall take effect 6 months after the date of startup

of the affected facility or on December 19, 1996, whichever is later.

(2) If both the certified chief facility operator and certified shift supervisor are unavailable, a provisionally certified control room operator on site at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, the owner or operator of the affected facility must meet one of three criteria:

(i) When the certified chief facility operator and certified shift supervisor are both off site for 12 hours or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor.

(ii) When the certified chief facility operator and certified shift supervisor are off site for more than 12 hours, but for two weeks or less, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Administrator. However, the owner or operator of the affected facility must record the period when the certified chief facility operator and certified shift supervisor are off site and include that information in the annual report as specified under § 60.59b(g)(5).

(iii) When the certified chief facility operator and certified shift supervisor are off site for more than two weeks, and no other certified operator is on site, the provisionally certified control room operator may perform the duties of the certified chief facility operator or certified shift supervisor without approval by the Administrator. However, the owner or operator of the affected facility must take two actions:

(A) Notify the Administrator in writing. In the notice, state what caused the absence and what actions are being taken by the owner or operator of the facility to ensure that a certified chief facility operator or certified shift supervisor is on site as expeditiously as practicable.

(B) Submit a status report and corrective action summary to the Administrator every four weeks following the initial notification. If the Administrator provides notice that the status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.

(3) A provisionally certified operator who is newly promoted or recently transferred to a shift supervisor position or a chief facility operator position at the municipal waste combustion unit may perform the duties of the certified chief facility operator or certified shift supervisor without notice to, or approval by, the Administrator for up to six months before taking the ASME QRO certification exam.

(d) All chief facility operators, shift supervisors, and control room operators at affected facilities must complete the EPA or State municipal waste combustor operator training course no later than the date 6 months after the date of startup of the affected facility or by December 19, 1996, whichever is later.

(e) The owner or operator of an affected facility shall develop and update on a yearly basis a site-specific operating manual that shall, at a minimum, address the elements of municipal waste combustor unit operation specified in paragraphs (e)(1) through (e)(11) of this section.

(1) A summary of the applicable standards under this subpart;

(2) A description of basic combustion theory applicable to a municipal waste combustor unit;

(3) Procedures for receiving, handling, and feeding municipal solid waste;

(4) Municipal waste combustor unit startup, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the municipal waste combustor unit within the standards established under this subpart;

(7) Procedures for responding to periodic upset or off-specification conditions;

(8) Procedures for minimizing particulate matter carryover;

(9) Procedures for handling ash;

(10) Procedures for monitoring municipal waste combustor unit emissions; and

(11) Reporting and recordkeeping procedures.

(f) The owner or operator of an affected facility shall establish a training program to review the operating manual according to the schedule specified in paragraphs (f)(1) and (f)(2) of this section with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

(1) Each person specified in paragraph (f) of this section shall undergo initial training no later than the date specified in paragraph (f)(1)(i), (f)(1)(ii), or (f)(1)(iii) of this section whichever is later.

(i) The date 6 months after the date of startup of the affected facility;

(ii) The date prior to the day the person assumes responsibilities affecting municipal waste combustor unit operation; or

(iii) December 19, 1996.

(2) Annually, following the initial review required by paragraph (f)(1) of this section.

(g) The operating manual required by paragraph (e) of this section shall be kept in a readily accessible location for all persons required to undergo training under paragraph (f) of this section. The operating manual and records of training shall be available for inspection by the EPA or its delegated enforcement agency upon request.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997; 71 FR 27337, May 10, 2006]

§ 60.55b Standards for municipal waste combustor fugitive ash emissions.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22 observations as specified in § 60.58b(k), except as provided in paragraphs (b) and (c) of this section.

(b) The emission limit specified in paragraph (a) of this section does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit specified in paragraph (a) of this section does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(c) The provisions specified in paragraph (a) of this section do not apply during maintenance and repair of ash conveying systems.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.56b Standards for air curtain incinerators.

On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, the owner or operator of an air curtain incinerator with the capacity to combust greater than 250 tons per day of municipal solid waste and that combusts a fuel feed stream composed of 100 percent yard waste and no other municipal solid waste materials shall at no time cause to be discharged into the atmosphere from that incinerator any gases that exhibit greater than 10-percent opacity (6-minute average), except that an opacity level of up to 35 percent (6-minute average) is permitted during startup periods during the first 30 minutes of operation of the unit.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.57b Siting requirements.

(a) The owner or operator of an affected facility shall prepare a materials separation plan, as defined in § 60.51b, for the affected facility and its

service area, and shall comply with the requirements specified in paragraphs (a)(1) through (a)(10) of this section. The initial application is defined as representing a good faith submittal as determined by EPA.

(1) The owner or operator shall prepare a preliminary draft materials separation plan and shall make the plan available to the public as specified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(i) The owner or operator shall distribute the preliminary draft materials separation plan to the principal public libraries in the area where the affected facility is to be constructed.

(ii) The owner or operator shall publish a notification of a public meeting in the principal newspaper(s) serving the area where the affected facility is to be constructed and where the waste treated by the affected facility will primarily be collected. As a minimum, the notification shall include the information specified in paragraphs (a)(1)(ii)(A) through (a)(1)(ii)(D) of this section.

(A) The date, time, and location of the public meeting.

(B) The location of the public libraries where the preliminary draft materials separation plan may be found, including normal business hours of the libraries.

(C) An agenda of the issues to be discussed at the public meeting.

(D) The dates that the public comment period on the preliminary draft materials separation plan begins and ends.

(2) The owner or operator shall conduct a public meeting, accept comments on the preliminary draft materials separation plan, and comply with the requirements specified in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) The public meeting shall be conducted in the county where the affected facility is to be located.

(ii) The public meeting shall be scheduled to occur 30 days or more after making the preliminary draft materials separation plan available to the public as specified under paragraph (a)(1) of this section.

(iii) Suggested issues to be addressed at the public meeting are listed in paragraphs (a)(2)(iii)(A) through (a)(2)(iii)(H) of this section.

(A) The expected size of the service area for the affected facility.

(B) The amount of waste generation anticipated for the service area.

(C) The types and estimated amounts of materials proposed for separation.

(D) The methods proposed for materials separation.

(E) The amount of residual waste to be disposed.

(F) Alternate disposal methods for handling the residual waste.

(G) Identification of the location(s) where responses to public comment on the preliminary draft materials separation plan will be available for inspection, as specified in paragraphs (a)(3) and (a)(4) of this section.

(H) Identification of the locations where the final draft materials separation plan will be available for inspection, as specified in paragraph (a)(7).

(iv) Nothing in this section shall preclude an owner or operator from combining this public meeting with any other public meeting required as part of any other Federal, State, or local permit review process except the public meeting required under paragraph (b)(4) of this section.

(3) Following the public meeting required by paragraph (a)(2) of this section, the owner or operator shall prepare responses to the comments received at the public meeting.

(4) The owner or operator shall make the document summarizing responses to public comments available to the public (including distribution to the principal public libraries used to announce the meeting) in the service area where the affected facility is to be located.

(5) The owner or operator shall prepare a final draft materials separation plan for the affected facility considering the public comments received at the public meeting.

(6) As required under § 60.59b(a), the owner or operator shall submit to EPA a copy of the notification of the public meeting, a transcript of the public meeting, the document summarizing responses to public comments, and copies of both the preliminary and final draft materials separation plans on or

before the time the facility's application for a construction permit is submitted under 40 CFR part 51, subpart I, or part 52, as applicable.

(7) As part of the distribution of the siting analysis required under paragraph (b)(3) of this section, the owner or operator shall make the final draft materials separation plan required under paragraph (a)(5) of this section available to the public, as specified in paragraph (b)(3) of this section.

(8) As part of the public meeting for review of the siting analysis required under paragraph (b)(4) of this section, the owner or operator shall address questions concerning the final draft materials separation plan required by paragraph (a)(5) of this section including discussion of how the final draft materials separation plan has changed from the preliminary draft materials separation plan that was discussed at the first public meeting required by paragraph (a)(2) of this section.

(9) If the owner or operator receives any comments on the final draft materials separation plan during the public meeting required in paragraph (b)(4) of this section, the owner or operator shall respond to those comments in the document prepared in accordance with paragraph (b)(5) of this section.

(10) The owner or operator shall prepare a final materials separation plan and shall submit, as required under § 60.59b(b)(5)(ii), the final materials separation plan as part of the initial notification of construction.

(b) The owner or operator of an affected facility for which the initial application for a construction permit under 40 CFR part 51, subpart I, or part 52, as applicable, is submitted after December 19, 1995 shall prepare a siting analysis in accordance with paragraphs (b)(1) and (b)(2) of this section and shall comply with the requirements specified in paragraphs (b)(3) through (b)(7) of this section.

(1) The siting analysis shall be an analysis of the impact of the affected facility on ambient air quality, visibility, soils, and vegetation.

(2) The analysis shall consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to the public health or the environment.

(3) The owner or operator shall make the siting analysis and final draft materials separation plan required by paragraph (a)(5) of this section available to the public as specified in paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(i) The owner or operator shall distribute the siting analysis and final draft materials separation plan to the principal public libraries in the area where the affected facility is to be constructed.

(ii) The owner or operator shall publish a notification of a public meeting in the principal newspaper(s) serving the area where the affected facility is to be constructed and where the waste treated by the affected facility will primarily be collected. As a minimum, the notification shall include the information specified in paragraphs (b)(3)(ii)(A) through (b)(3)(ii)(D) of this section.

(A) The date, time, and location of the public meeting.

(B) The location of the public libraries where the siting analyses and final draft materials separation plan may be found, including normal business hours.

(C) An agenda of the issues to be discussed at the public meeting.

(D) The dates that the public comment period on the siting analyses and final draft materials separation plan begins and ends.

(4) The owner or operator shall conduct a public meeting and accept comments on the siting analysis and the final draft materials separation plan required under paragraph (a)(5) of this section. The public meeting shall be conducted in the county where the affected facility is to be located and shall be scheduled to occur 30 days or more after making the siting analysis available to the public as specified under paragraph (b)(3) of this section.

(5) The owner or operator shall prepare responses to the comments on the siting analysis and the final draft materials separation plan that are received at the public meeting.

(6) The owner or operator shall make the document summarizing responses to public comments available to the

public (including distribution to all public libraries) in the service area where the affected facility is to be located.

(7) As required under § 60.59b(b)(5), the owner or operator shall submit a copy of the notification of the public meeting, a transcript of the public meeting, the document summarizing responses to public comments, and the siting analysis as part of the initial notification of construction.

(c) The owner or operator of an affected facility for which construction is commenced after September 20, 1994 shall prepare a siting analysis in accordance with 40 CFR part 51, subpart I, or part 52, as applicable, and shall submit the siting analysis as part of the initial notification of construction. Affected facilities subject to paragraphs (a) and (b) of this section are not subject to this paragraph.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997; 71 FR 27337, May 10, 2006]

§ 60.58b Compliance and performance testing.

(a) The provisions for startup, shutdown, and malfunction are provided in paragraphs (a)(1) and (a)(2) of this section.

(1) Except as provided by § 60.56b, the standards under this subpart apply at all times except during periods of startup, shutdown, and malfunction. Duration of startup, shutdown, or malfunction periods are limited to 3 hours per occurrence, except as provided in paragraph (a)(1)(iii) of this section. During periods of startup, shutdown, or malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of 40 CFR 60.59b(d)(7).

(i) The startup period commences when the affected facility begins the continuous burning of municipal solid waste and does not include any warmup period when the affected facility is combusting fossil fuel or other nonmunicipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

(ii) Continuous burning is the continuous, semicontinuous, or batch feeding of municipal solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of municipal solid waste solely to provide thermal protection of the grate or hearth during the startup period when municipal solid waste is not being fed to the grate is not considered to be continuous burning.

(iii) For the purpose of compliance with the carbon monoxide emission limits in § 60.53b(a), if a loss of boiler water level control (*e.g.*, boiler waterwall tube failure) or a loss of combustion air control (*e.g.*, loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence. During such periods of malfunction, monitoring data shall be dismissed or excluded from compliance calculations, but shall be recorded and reported in accordance with the provisions of § 60.59b(d)(7).

(2) The opacity limits for air curtain incinerators specified in § 60.56b apply at all times as specified under § 60.56b except during periods of malfunction. Duration of malfunction periods are limited to 3 hours per occurrence.

(b) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring the oxygen or carbon dioxide content of the flue gas at each location where carbon monoxide, sulfur dioxide, nitrogen oxides emissions, or particulate matter (if the owner or operator elects to continuously monitor emissions under paragraph (n) of this section) are monitored and record the output of the system and shall comply with the test procedures and test methods specified in paragraphs (b)(1) through (b)(8) of this section.

(1) The span value of the oxygen (or 20 percent carbon dioxide) monitor shall be 25 percent oxygen (or 20 percent carbon dioxide).

(2) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(3) The initial performance evaluation shall be completed no later than

180 days after the date of initial start-up of the affected facility, as specified under § 60.8 of subpart A of this part.

(4) The monitor shall conform to Performance Specification 3 in appendix B of this part except for section 2.3 (relative accuracy requirement).

(5) The quality assurance procedures of appendix F of this part except for section 5.1.1 (relative accuracy test audit) shall apply to the monitor.

(6) If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels shall be established during the initial performance test according to the procedures and methods specified in paragraphs (b)(6)(i) through (b)(6)(iv) of this section. This relationship may be reestablished during performance compliance tests.

(i) The fuel factor equation in Method 3B shall be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Method 3, 3A, or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

(ii) Samples shall be taken for at least 30 minutes in each hour.

(iii) Each sample shall represent a 1-hour average.

(iv) A minimum of three runs shall be performed.

(7) The relationship between carbon dioxide and oxygen concentrations that is established in accordance with paragraph (b)(6) of this section shall be submitted to EPA as part of the initial performance test report and, if applicable, as part of the annual test report if the relationship is reestablished during the annual performance test.

(8) During a loss of boiler water level control or loss of combustion air control malfunction period as specified in paragraph (a)(1)(iii) of this section, a diluent cap of 14 percent for oxygen or 5 percent for carbon dioxide may be used in the emissions calculations for sulfur dioxide and nitrogen oxides.

(c) Except as provided in paragraph (c)(10) of this section, the procedures and test methods specified in paragraphs (c)(1) through (c)(11) of this section shall be used to determine compliance with the emission limits for particulate matter and opacity under § 60.52b(a)(1) and (a)(2).

(1) The EPA Reference Method 1 shall be used to select sampling site and number of traverse points.

(2) The EPA Reference Method 3, 3A or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used for gas analysis.

(3) EPA Reference Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160 °C. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

(4) The owner or operator of an affected facility may request that compliance with the particulate matter emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(5) As specified under § 60.8 of subpart A of this part, all performance tests shall consist of three test runs. The average of the particulate matter emission concentrations from the three test runs is used to determine compliance.

(6) In accordance with paragraphs (c)(7) and (c)(11) of this section, EPA Reference Method 9 shall be used for determining compliance with the opacity limit except as provided under § 60.11(e) of subpart A of this part.

(7) The owner or operator of an affected facility shall conduct an initial performance test for particulate matter emissions and opacity as required under § 60.8 of subpart A of this part.

(8) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous opacity monitoring system for measuring opacity and shall follow the methods and procedures specified in paragraphs (c)(8)(i) through (c)(8)(iv) of this section.

(i) The output of the continuous opacity monitoring system shall be recorded on a 6-minute average basis.

(ii) The continuous opacity monitoring system shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(iii) The continuous opacity monitoring system shall conform to Performance Specification 1 in appendix B of this part.

(iv) The initial performance evaluation shall be completed no later than 180 days after the date of the initial startup of the municipal waste combustor unit, as specified under § 60.8 of subpart A of this part.

(9) Following the date that the initial performance test for particulate matter is completed or is required to be completed under § 60.8 of subpart A of this part for an affected facility, the owner or operator shall conduct a performance test for particulate matter on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and must complete five performance tests in each 5-year calendar period).

(10) In place of particulate matter testing with EPA Reference Method 5, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring particulate matter emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor particulate matter emissions instead of conducting performance testing using EPA Method 5 shall install, calibrate, maintain, and operate a continuous emission monitoring system and shall comply with the requirements specified in paragraphs (c)(10)(i) through (c)(10)(xiv) of this section. The owner or operator who elects to continuously monitor particulate matter emissions instead of conducting performance testing using EPA Method 5 is not required to complete performance testing for particulate matter as specified in paragraph (c)(9) of this section and is not required to continuously monitor opacity as specified in paragraph (c)(8) of this section.

(i) Notify the Administrator one month before starting use of the system.

(ii) Notify the Administrator one month before stopping use of the system.

(iii) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(iv) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of the continuous monitoring system if the owner or operator was previously determining compliance by Method 5 performance tests, whichever is later.

(v) The owner or operator of an affected facility may request that compliance with the particulate matter emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(vi) The owner or operator of an affected facility shall conduct an initial performance test for particulate matter emissions as required under § 60.8 of subpart A of this part. Compliance with the particulate matter emission limit shall be determined by using the continuous emission monitoring system specified in paragraph (c)(10) of this section to measure particulate matter and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19, section 12.4.1.

(vii) Compliance with the particulate matter emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data.

(viii) After April 28, 2008, at a minimum, valid continuous monitoring system hourly averages shall be obtained as specified in paragraphs (c)(10)(viii)(A) and (c)(10)(viii)(B) for at least 90 percent of the operating hours per calendar quarter and 95 percent of the operating hours per calendar year that the affected facility is combusting municipal solid waste.

(A) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(B) Each particulate matter 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(ix) The 1-hour arithmetic averages required under paragraph (c)(10)(vii) of this section shall be expressed in milligrams per dry standard cubic meter corrected to 7 percent oxygen (dry basis) and shall be used to calculate the 24-hour daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(x) All valid continuous emission monitoring system data shall be used in calculating average emission concentrations even if the minimum continuous emission monitoring system data requirements of paragraph (c)(10)(viii) of this section are not met.

(xi) The continuous emission monitoring system shall be operated according to Performance Specification 11 in appendix B of this part.

(xii) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 11 in appendix B of this part, particulate matter and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (c)(10)(xii)(A) and (c)(10)(xii)(B) of this section.

(A) For particulate matter, EPA Reference Method 5 shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, as applicable shall be used.

(xiii) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part.

(xiv) When particulate matter emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 90 percent of the hours per calendar quarter and 95 percent of the hours per calendar year that the affected facility is operated and combusting municipal solid waste.

(11) Following the date that the initial performance test for opacity is completed or is required to be completed under § 60.8 of subpart A of this part for an affected facility, the owner or operator shall conduct a performance test for opacity on an annual basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and must complete five performance tests in each 5-year calendar period) using the test method specified in paragraph (c)(6) of this section.

(d) The procedures and test methods specified in paragraphs (d)(1) and (d)(2) of this section shall be used to determine compliance with the emission limits for cadmium, lead, and mercury under § 60.52b(a).

(1) The procedures and test methods specified in paragraphs (d)(1)(i) through (d)(1)(ix) of this section shall be used to determine compliance with the emission limits for cadmium and lead under § 60.52b(a) (3) and (4).

(i) The EPA Reference Method 1 shall be used for determining the location and number of sampling points.

(ii) The EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used for flue gas analysis.

(iii) The EPA Reference Method 29 shall be used for determining compliance with the cadmium and lead emission limits.

(iv) An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 29 test run for cadmium and lead required under paragraph (d)(1)(iii) of this section.

(v) The owner or operator of an affected facility may request that compliance with the cadmium or lead emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility

shall be established as specified in paragraph (b)(6) of this section.

(vi) All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the cadmium or lead emission concentrations from three test runs or more shall be used to determine compliance.

(vii) Following the date of the initial performance test or the date on which the initial performance test is required to be completed under § 60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct a performance test for compliance with the emission limits for cadmium and lead on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and must complete five performance tests in each 5-year calendar period).

(viii)–(ix) [Reserved]

(2) The procedures and test methods specified in paragraphs (d)(2)(i) through (d)(2)(xi) of this section shall be used to determine compliance with the mercury emission limit under § 60.52b(a)(5).

(i) The EPA Reference Method 1 shall be used for determining the location and number of sampling points.

(ii) The EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used for flue gas analysis.

(iii) The EPA Reference Method 29 or as an alternative ASTM D6784–02 shall be used to determine the mercury emission concentration. The minimum sample volume when using Method 29 as an alternative ASTM D6784–02 for mercury shall be 1.7 cubic meters.

(iv) An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Method 29 or as an alternative ASTM D6784–02 test run for mercury required under paragraph (d)(2)(iii) of this section.

(v) The percent reduction in the potential mercury emissions (%PHg) is computed using equation 1:

$$\left(\%P_{Hg}\right) = \left(\frac{E_i - E_o}{E_i}\right) \times 100 \qquad (1)$$

where:

$\%P_{Hg}$ = percent reduction of the potential mercury emissions achieved.

E_i = potential mercury emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o = controlled mercury emission concentration measured at the mercury control device outlet, corrected to 7 percent oxygen (dry basis).

(vi) All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the mercury emission concentrations or percent reductions from three test runs or more is used to determine compliance.

(vii) The owner or operator of an affected facility may request that compliance with the mercury emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(viii) The owner or operator of an affected facility shall conduct an initial performance test for mercury emissions as required under § 60.8 of subpart A of this part.

(ix) Following the date that the initial performance test for mercury is completed or is required to be completed under § 60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct a performance test for mercury emissions on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months from the previous performance test; and must complete five performance tests in each 5-year calendar period).

(x) [Reserved]

(xi) The owner or operator of an affected facility where activated carbon injection is used to comply with the mercury emission limit shall follow the procedures specified in paragraph (m) of this section for measuring and calculating carbon usage.

(3) In place of cadmium and lead testing with EPA Reference Method 29 as an alternative ASTM D6784–02, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system

for monitoring cadmium and lead emissions discharged to the atmosphere and record the output of the system according to the provisions of paragraphs (n) and (o) of this section.

(4) In place of mercury testing with EPA Reference Method 29 or as an alternative ASTM D6784–02, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system or a continuous automated sampling system for monitoring mercury emissions discharged to the atmosphere and record the output of the system according to the provisions of paragraphs (n) and (o) of this section, or paragraphs (p) and (q) of this section, as appropriate. The owner or operator who elects to continuously monitor mercury in place of mercury testing with EPA Reference Method 29 or as an alternative ASTM D6784–02 is not required to complete performance testing for mercury as specified in paragraph (d)(2)(ix) of this section.

(e) The procedures and test methods specified in paragraphs (e)(1) through (e)(14) of this section shall be used for determining compliance with the sulfur dioxide emission limit under § 60.52b(b)(1).

(1) The EPA Reference Method 19, section 4.3, shall be used to calculate the daily geometric average sulfur dioxide emission concentration.

(2) The EPA Reference Method 19, section 5.4, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration.

(3) The owner or operator of an affected facility may request that compliance with the sulfur dioxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(4) The owner or operator of an affected facility shall conduct an initial performance test for sulfur dioxide emissions as required under § 60.8 of subpart A of this part. Compliance with the sulfur dioxide emission limit (concentration or percent reduction) shall be determined by using the continuous emission monitoring system specified in paragraph (e)(5) of this section to measure sulfur dioxide and calculating a 24-hour daily geometric average emission concentration or a 24-hour daily geometric average percent reduction using EPA Reference Method 19, sections 4.3 and 5.4, as applicable.

(5) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system.

(6) Following the date that the initial performance test for sulfur dioxide is completed or is required to be completed under § 60.8 of subpart A of this part, compliance with the sulfur dioxide emission limit shall be determined based on the 24-hour daily geometric average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data if compliance is based on an emission concentration, or continuous emission monitoring system inlet and outlet data if compliance is based on a percent reduction.

(7) At a minimum, valid continuous monitoring system hourly averages shall be obtained as specified in paragraphs (e)(7)(i) and (e)(7)(ii) for 90 percent of the operating hours per calendar quarter and 95 percent of the operating days per calendar year that the affected facility is combusting municipal solid waste.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) Each sulfur dioxide 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(8) The 1-hour arithmetic averages required under paragraph (e)(6) of this section shall be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 24-hour daily geometric average emission concentrations and daily geometric average emission percent reductions. The 1-hour arithmetic averages shall be

calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(9) All valid continuous emission monitoring system data shall be used in calculating average emission concentrations and percent reductions even if the minimum continuous emission monitoring system data requirements of paragraph (e)(7) of this section are not met.

(10) The procedures under § 60.13 of subpart A of this part shall be followed for installation, evaluation, and operation of the continuous emission monitoring system.

(11) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the municipal waste combustor as specified under § 60.8 of subpart A of this part.

(12) The continuous emission monitoring system shall be operated according to Performance Specification 2 in appendix B of this part. For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet sulfur dioxide continuous emission monitoring systems should be no greater than 20 percent of the mean value of the reference method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference between the reference method and the continuous emission monitoring systems, whichever is greater.

(i) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 in appendix B of this part, sulfur dioxide and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (e)(12)(i)(A) and (e)(12)(i)(B) of this section.

(A) For sulfur dioxide, EPA Reference Method 6, 6A, or 6C, or as an alternative ASME PTC–19–10–1981—part10, shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used.

(ii) The span value of the continuous emissions monitoring system at the inlet to the sulfur dioxide control device shall be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit. The span value of the continuous emission monitoring system at the outlet of the sulfur dioxide control device shall be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit.

(13) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 1 in appendix F of this part.

(14) When sulfur dioxide emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and/or zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by EPA or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 90 percent of the hours per calendar quarter and 95 percent of the hours per calendar year that the affected facility is operated and combusting municipal solid waste.

(f) The procedures and test methods specified in paragraphs (f)(1) through (f)(8) of this section shall be used for determining compliance with the hydrogen chloride emission limit under § 60.52b(b)(2).

(1) The EPA Reference Method 26 or 26A, as applicable, shall be used to determine the hydrogen chloride emission concentration. The minimum sampling time shall be 1 hour.

(2) An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each test run for hydrogen chloride required by paragraph (f)(1) of this section.

(3) The percent reduction in potential hydrogen chloride emissions (% P_{HCl}) is computed using equation 2:

$$\left(\%P_{HCl}\right) = \left(\frac{E_i - E_o}{E_i}\right) \times 100 \qquad (2)$$

where:

$\%P_{HCl}$=percent reduction of the potential hydrogen chloride emissions achieved.

E_i=potential hydrogen chloride emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o=controlled hydrogen chloride emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(4) The owner or operator of an affected facility may request that compliance with the hydrogen chloride emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(5) As specified under §60.8 of subpart A of this part, all performance tests shall consist of three test runs. The average of the hydrogen chloride emission concentrations or percent reductions from the three test runs is used to determine compliance.

(6) The owner or operator of an affected facility shall conduct an initial performance test for hydrogen chloride as required under §60.8 of subpart A of this part.

(7) Following the date that the initial performance test for hydrogen chloride is completed or is required to be completed under §60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct a performance test for hydrogen chloride emissions on an annual basis (no more than 12 calendar months following the previous performance test).

(8) In place of hydrogen chloride testing with EPA Reference Method 26 or 26A, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring hydrogen chloride emissions discharged to the atmosphere and record the output of the system according to the provisions of paragraphs (n) and (o) of this section.

(g) The procedures and test methods specified in paragraphs (g)(1) through (g)(9) of this section shall be used to determine compliance with the limits for dioxin/furan emissions under §60.52b(c).

(1) The EPA Reference Method 1 shall be used for determining the location and number of sampling points.

(2) The EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used for flue gas analysis.

(3) The EPA Reference Method 23 shall be used for determining the dioxin/furan emission concentration.

(i) The minimum sample time shall be 4 hours per test run.

(ii) An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Method 23 test run for dioxins/furans.

(4) The owner or operator of an affected facility shall conduct an initial performance test for dioxin/furan emissions in accordance with paragraph (g)(3) of this section, as required under §60.8 of subpart A of this part.

(5) Following the date that the initial performance test for dioxins/furans is completed or is required to be completed under §60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct performance tests for dioxin/furan emissions in accordance with paragraph (g)(3) of this section, according to one of the schedules specified in paragraphs (g)(5)(i) through (g)(5)(iii) of this section.

(i) For affected facilities, performance tests shall be conducted on a calendar year basis (no less than 9 calendar months and no more than 15 calendar months following the previous performance test; and must complete five performance tests in each 5-year calendar period).

(ii) For the purpose of evaluating system performance to establish new operating parameter levels, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, the owner or operator of an affected facility that qualifies for the performance testing schedule specified in paragraph (g)(5)(iii) of this section, may test one unit for dioxin/furan and apply the dioxin/furan operating parameters to similarly designed and equipped units on site by meeting the requirements specified in paragraphs (g)(5)(ii)(A) through (g)(5)(ii)(D) of this section.

(A) Follow the testing schedule established in paragraph (g)(5)(iii) of this section. For example, each year a different affected facility at the municipal waste combustor plant shall be tested, and the affected facilities at the plant shall be tested in sequence (*e.g.*, unit 1, unit 2, unit 3, as applicable).

(B) Upon meeting the requirements in paragraph (g)(5)(iii) of this section for one affected facility, the owner or operator may elect to apply the average carbon mass feed rate and associated carbon injection system operating parameter levels for dioxin/furan as established in paragraph (m) of this section to similarly designed and equipped units on site.

(C) Upon testing each subsequent unit in accordance with the testing schedule established in paragraph (g)(5)(iii) of this section, the dioxin/furan and mercury emissions of the subsequent unit shall not exceed the dioxin/furan and mercury emissions measured in the most recent test of that unit prior to the revised operating parameter levels.

(D) The owner or operator of an affected facility that selects to follow the performance testing schedule specified in paragraph (g)(5)(iii) of this section and apply the carbon injection system operating parameters to similarly designed and equipped units on site shall follow the procedures specified in § 60.59b(g)(4) for reporting.

(iii) Where all performance tests over a 2-year period indicate that dioxin/furan emissions are less than or equal to 7 nanograms per dry standard cubic meter (total mass) for all affected facilities located within a municipal waste combustor plant, the owner or operator of the municipal waste combustor plant may elect to conduct annual performance tests for one affected facility (i.e., unit) per year at the municipal waste combustor plant. At a minimum, a performance test for dioxin/furan emissions shall be conducted on a calendar year basis (no less than 9 calendar months and no more than 15 months following the previous performance test; and must complete five performance tests in each 5-year calendar period) for one affected facility at the municipal waste combustor plant. Each year a different affected facility at the municipal waste combustor plant shall be tested, and the affected facilities at the plant shall be tested in sequence (*e.g.*, unit 1, unit 2, unit 3, as applicable). If each annual performance test continues to indicate a dioxin/furan emission level less than or equal to 7 nanograms per dry standard cubic meter (total mass), the owner or operator may continue conducting a performance test on only one affected facility per calendar year. If any annual performance test indicates either a dioxin/furan emission level greater than 7 nanograms per dry standard cubic meter (total mass), performance tests shall thereafter be conducted annually on all affected facilities at the plant until and unless all annual performance tests for all affected facilities at the plant over a 2-year period indicate a dioxin/furan emission level less than or equal to 7 nanograms per dry standard cubic meter (total mass).

(6) The owner or operator of an affected facility that selects to follow the performance testing schedule specified in paragraph (g)(5)(iii) of this section shall follow the procedures specified in § 60.59b(g)(4) for reporting the selection of this schedule.

(7) The owner or operator of an affected facility where activated carbon is used shall follow the procedures specified in paragraph (m) of this section for measuring and calculating the carbon usage rate.

(8) The owner or operator of an affected facility may request that compliance with the dioxin/furan emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(9) As specified under § 60.8 of subpart A of this part, all performance tests shall consist of three test runs. The average of the dioxin/furan emission concentrations from the three test runs is used to determine compliance.

(10) In place of dioxin/furan sampling and testing with EPA Reference Method 23, an owner or operator may elect to sample dioxin/furan by installing,

calibrating, maintaining, and operating a continuous automated sampling system for monitoring dioxin/furan emissions discharged to the atmosphere, recording the output of the system, and analyzing the sample using EPA Method 23. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to dioxin/furan from monitors is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan. The owner or operator of an affected facility who elects to continuously sample dioxin/furan emissions instead of sampling and testing using EPA Method 23 shall install, calibrate, maintain, and operate a continuous automated sampling system and shall comply with the requirements specified in paragraphs (p) and (q) of this section.

(h) The procedures and test methods specified in paragraphs (h)(1) through (h)(12) of this section shall be used to determine compliance with the nitrogen oxides emission limit for affected facilities under §60.52b(d).

(1) The EPA Reference Method 19, section 4.1, shall be used for determining the daily arithmetic average nitrogen oxides emission concentration.

(2) The owner or operator of an affected facility may request that compliance with the nitrogen oxides emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(3) The owner or operator of an affected facility subject to the nitrogen oxides limit under §60.52b(d) shall conduct an initial performance test for nitrogen oxides as required under §60.8 of subpart A of this part. Compliance with the nitrogen oxides emission limit shall be determined by using the continuous emission monitoring system specified in paragraph (h)(4) of this section for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission concentration using EPA Reference Method 19, section 4.1.

(4) The owner or operator of an affected facility subject to the nitrogen oxides emission limit under §60.52b(d) shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring nitrogen oxides discharged to the atmosphere, and record the output of the system.

(5) Following the date that the initial performance test for nitrogen oxides is completed or is required to be completed under §60.8 of subpart A of this part, compliance with the emission limit for nitrogen oxides required under §60.52b(d) shall be determined based on the 24-hour daily arithmetic average of the hourly emission concentrations using continuous emission monitoring system outlet data.

(6) At a minimum, valid continuous emission monitoring system hourly averages shall be obtained as specified in paragraphs (h)(6)(i) and (h)(6)(ii) of this section for 90 percent of the operating hours per calendar quarter and for 95 percent of the operating hours per calendar year that the affected facility is combusting municipal solid waste.

(i) At least 2 data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) Each nitrogen oxides 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(7) The 1-hour arithmetic averages required by paragraph (h)(5) of this section shall be expressed in parts per million by volume (dry basis) and used to calculate the 24-hour daily arithmetic average concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.

(8) All valid continuous emission monitoring system data must be used in calculating emission averages even if the minimum continuous emission monitoring system data requirements of paragraph (h)(6) of this section are not met.

(9) The procedures under §60.13 of subpart A of this part shall be followed for installation, evaluation, and operation of the continuous emission monitoring system. The initial performance

evaluation shall be completed no later than 180 days after the date of initial startup of the municipal waste combustor unit, as specified under § 60.8 of subpart A of this part.

(10) The owner or operator of an affected facility shall operate the continuous emission monitoring system according to Performance Specification 2 in appendix B of this part and shall follow the procedures and methods specified in paragraphs (h)(10)(i) and (h)(10)(ii) of this section.

(i) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 of appendix B of this part, nitrogen oxides and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (h)(10)(i)(A) and (h)(10)(i)(B) of this section.

(A) For nitrogen oxides, EPA Reference Method 7, 7A, 7C, 7D, or 7E shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, or as an alternative ASME PTC–19–10–1981—part10, as applicable, shall be used.

(ii) The span value of the continuous emission monitoring system shall be 125 percent of the maximum estimated hourly potential nitrogen oxide emissions of the municipal waste combustor unit.

(11) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 1 in appendix F of this part.

(12) When nitrogen oxides continuous emission data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained using other monitoring systems as approved by EPA or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 90 percent of the hours per calendar quarter and 95 percent of the hours per calendar year the unit is operated and combusting municipal solid waste.

(i) The procedures specified in paragraphs (i)(1) through (i)(12) of this section shall be used for determining compliance with the operating requirements under § 60.53b.

(1) Compliance with the carbon monoxide emission limits in § 60.53b(a) shall be determined using a 4-hour block arithmetic average for all types of affected facilities except mass burn rotary waterwall municipal waste combustors and refuse-derived fuel stokers.

(2) For affected mass burn rotary waterwall municipal waste combustors and refuse-derived fuel stokers, compliance with the carbon monoxide emission limits in § 60.53b(a) shall be determined using a 24-hour daily arithmetic average.

(3) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring carbon monoxide at the combustor outlet and record the output of the system and shall follow the procedures and methods specified in paragraphs (i)(3)(i) through (i)(3)(iii) of this section.

(i) The continuous emission monitoring system shall be operated according to Performance Specification 4A in appendix B of this part.

(ii) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 4A in appendix B of this part, carbon monoxide and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (i)(3)(ii)(A) and (i)(3)(ii)(B) of this section. For affected facilities subject to the 100 parts per million dry volume carbon monoxide standard, the relative accuracy criterion of 5 parts per million dry volume is calculated as the absolute value of the mean difference between the reference method and continuous emission monitoring systems.

(A) For carbon monoxide, EPA Reference Method 10, 10A, or 10B shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, or ASME PTC–19–10–1981—part10 (incorporated by reference, see § 60.17 of subpart A of this part), as applicable, shall be used.

(iii) The span value of the continuous emission monitoring system shall be 125 percent of the maximum estimated hourly potential carbon monoxide emissions of the municipal waste combustor unit.

(4) The 4-hour block and 24-hour daily arithmetic averages specified in paragraphs (i)(1) and (i)(2) of this section shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume corrected to 7 percent oxygen (dry basis). The 1-hour arithmetic averages shall be calculated using the data points generated by the continuous emission monitoring system. At least two data points shall be used to calculate each 1-hour arithmetic average.

(5) The owner or operator of an affected facility may request that compliance with the carbon monoxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(6) The procedures specified in paragraphs (i)(6)(i) through (i)(6)(v) of this section shall be used to determine compliance with load level requirements under § 60.53b(b).

(i) The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam (or feedwater) flow in kilograms per hour (or pounds per hour) on a continuous basis; and record the output of the monitor. Steam (or feedwater) flow shall be calculated in 4-hour block arithmetic averages.

(ii) The method included in the ''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991)'' section 4 (incorporated by reference, see § 60.17 of subpart A of this part) shall be used for calculating the steam (or feedwater) flow required under paragraph (i)(6)(i) of this section. The recommendations in ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, partII of Fluid Meters, 6th edition (1971),'' chapter 4 (incorporated by reference—see § 60.17 of subpart A of this part) shall be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified in (i)(6)(iii) of this section.

(iii) Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.

(iv) All signal conversion elements associated with steam (or feedwater flow) measurements must be calibrated according to the manufacturer's instructions before each dioxin/furan performance test, and at least once per year.

(7) To determine compliance with the maximum particulate matter control device temperature requirements under § 60.53b(c), the owner or operator of an affected facility shall install, calibrate, maintain, and operate a device for measuring on a continuous basis the temperature of the flue gas stream at the inlet to each particulate matter control device utilized by the affected facility. Temperature shall be calculated in 4-hour block arithmetic averages.

(8) The maximum demonstrated municipal waste combustor unit load shall be determined during the initial performance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit specified in § 60.52b(c) is achieved. The maximum demonstrated municipal waste combustor unit load shall be the highest 4-hour arithmetic average load achieved during four consecutive hours during the most recent test during which compliance with the dioxin/furan emission limit was achieved. If a subsequent dioxin/furan performance test is being performed on only one affected facility at the MWC plant, as provided in paragraph (g)(5)(iii) of this section, the owner or operator may elect to apply the same maximum municipal waste combustor unit load from the tested facility for all the similarly designed and operated affected facilities at the MWC plant.

(9) For each particulate matter control device employed at the affected facility, the maximum demonstrated

particulate matter control device temperature shall be determined during the initial performance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit specified in § 60.52b(c) is achieved. The maximum demonstrated particulate matter control device temperature shall be the highest 4-hour arithmetic average temperature achieved at the particulate matter control device inlet during four consecutive hours during the most recent test during which compliance with the dioxin/furan limit was achieved. If a subsequent dioxin/furan performance test is being performed on only one affected facility at the MWC plant, as provided in paragraph (g)(5)(iii) of this section, the owner or operator may elect to apply the same maximum particulate matter control device temperature from the tested facility for all the similarly designed and operated affected facilities at the MWC plant.

(10) At a minimum, valid continuous emission monitoring system hourly averages shall be obtained as specified in paragraphs (i)(10)(i) and (i)(10)(ii) of this section for at least 90 percent of the operating hours per calendar quarter and 95 percent of the operating hours per calendar year that the affected facility is combusting municipal solid waste.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) At a minimum, each carbon monoxide 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(11) All valid continuous emission monitoring system data must be used in calculating the parameters specified under paragraph (i) of this section even if the minimum data requirements of paragraph (i)(10) of this section are not met. When carbon monoxide continuous emission data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained using other monitoring systems as approved by EPA or EPA Reference Method 10 to provide, as necessary, the minimum valid emission data.

(12) Quarterly accuracy determinations and daily calibration drift tests for the carbon monoxide continuous emission monitoring system shall be performed in accordance with procedure 1 in appendix F of this part.

(j) The procedures specified in paragraphs (j)(1) and (j)(2) of this section shall be used for calculating municipal waste combustor unit capacity as defined under § 60.51b.

(1) For municipal waste combustor units capable of combusting municipal solid waste continuously for a 24-hour period, municipal waste combustor unit capacity shall be calculated based on 24 hours of operation at the maximum charging rate. The maximum charging rate shall be determined as specified in paragraphs (j)(1)(i) and (j)(1)(ii) of this section as applicable.

(i) For combustors that are designed based on heat capacity, the maximum charging rate shall be calculated based on the maximum design heat input capacity of the unit and a heating value of 12,800 kilojoules per kilogram for combustors firing refuse-derived fuel and a heating value of 10,500 kilojoules per kilogram for combustors firing municipal solid waste that is not refuse-derived fuel.

(ii) For combustors that are not designed based on heat capacity, the maximum charging rate shall be the maximum design charging rate.

(2) For batch feed municipal waste combustor units, municipal waste combustor unit capacity shall be calculated as the maximum design amount of municipal solid waste that can be charged per batch multiplied by the maximum number of batches that could be processed in a 24-hour period. The maximum number of batches that could be processed in a 24-hour period is calculated as 24 hours divided by the design number of hours required to process one batch of municipal solid waste, and may include fractional batches (e.g., if one batch requires 16 hours, then 24/16, or 1.5 batches, could be combusted in a 24-hour period). For batch combustors that are designed based on heat capacity, the design

heating value of 12,800 kilojoules per kilogram for combustors firing refuse-derived fuel and a heating value of 10,500 kilojoules per kilogram for combustors firing municipal solid waste that is not refuse-derived fuel shall be used in calculating the municipal waste combustor unit capacity in megagrams per day of municipal solid waste.

(k) The procedures specified in paragraphs (k)(1) through (k)(4) of this section shall be used for determining compliance with the fugitive ash emission limit under §60.55b.

(1) The EPA Reference Method 22 shall be used for determining compliance with the fugitive ash emission limit under §60.55b. The minimum observation time shall be a series of three 1-hour observations. The observation period shall include times when the facility is transferring ash from the municipal waste combustor unit to the area where ash is stored or loaded into containers or trucks.

(2) The average duration of visible emissions per hour shall be calculated from the three 1-hour observations. The average shall be used to determine compliance with §60.55b.

(3) The owner or operator of an affected facility shall conduct an initial performance test for fugitive ash emissions as required under §60.8 of subpart A of this part.

(4) Following the date that the initial performance test for fugitive ash emissions is completed or is required to be completed under §60.8 of subpart A of this part for an affected facility, the owner or operator shall conduct a performance test for fugitive ash emissions on an annual basis (no more than 12 calendar months following the previous performance test).

(l) The procedures specified in paragraphs (l)(1) through (l)(3) of this section shall be used to determine compliance with the opacity limit for air curtain incinerators under §60.56b.

(1) The EPA Reference Method 9 shall be used for determining compliance with the opacity limit.

(2) The owner or operator of the air curtain incinerator shall conduct an initial performance test for opacity as required under §60.8 of subpart A of this part.

(3) Following the date that the initial performance test is completed or is required to be completed under §60.8 of subpart A of this part, the owner or operator of the air curtain incinerator shall conduct a performance test for opacity on an annual basis (no more than 12 calendar months following the previous performance test).

(m) The owner or operator of an affected facility where activated carbon injection is used to comply with the mercury emission limit under §60.52b(a)(5), and/or the dioxin/furan emission limits under §60.52(b)(c), or the dioxin/furan emission level specified in paragraph (g)(5)(iii) of this section shall follow the procedures specified in paragraphs (m)(1) through (m)(4) of this section.

(1) During the performance tests for dioxins/furans and mercury, as applicable, the owner or operator shall estimate an average carbon mass feed rate based on carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed, as specified in paragraphs (m)(1)(i) and (m)(1)(ii) of this section.

(i) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for mercury emissions and each subsequent performance test for mercury emissions.

(ii) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for dioxin/furan emissions and each subsequent performance test for dioxin/furan emissions. If a subsequent dioxin/furan performance test is being performed on only one affected facility at the MWC plant, as provided in paragraph (g)(5)(iii) of this section, the owner or operator may elect to apply the same estimated average carbon mass feed rate from the tested facility for all the similarly designed and operated affected facilities at the MWC plant.

(2) During operation of the affected facility, the carbon injection system operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (*e.g.*, screw feeder setting) shall be averaged over a block 8-

hour period, and the 8-hour block average must equal or exceed the level(s) documented during the performance tests specified under paragraphs (m)(1)(i) and (m)(1)(ii) of this section, except as specified in paragraphs (m)(2)(i) and (m)(2)(ii) of this section.

(i) During the annual dioxin/furan or mercury performance test and the 2 weeks preceding the annual dioxin/furan or mercury performance test, no limit is applicable for average mass carbon feed rate if the provisions of paragraph (m)(2)(ii) of this section are met.

(ii) The limit for average mass carbon feed rate may be waived in accordance with permission granted by the Administrator for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions.

(3) The owner or operator of an affected facility shall estimate the total carbon usage of the plant (kilograms or pounds) for each calendar quarter by two independent methods, according to the procedures in paragraphs (m)(3)(i) and (m)(3)(ii) of this section.

(i) The weight of carbon delivered to the plant.

(ii) Estimate the average carbon mass feed rate in kilograms per hour or pounds per hour for each hour of operation for each affected facility based on the parameters specified under paragraph (m)(1) of this section, and sum the results for all affected facilities at the plant for the total number of hours of operation during the calendar quarter.

(4) Pneumatic injection pressure or other carbon injection system operational indicator shall be used to provide additional verification of proper carbon injection system operation. The operational indicator shall provide an instantaneous visual and/or audible alarm to alert the operator of a potential interruption in the carbon feed that would not normally be indicated by direct monitoring of carbon mass feed rate (*e.g.*, continuous weight loss feeder) or monitoring of the carbon system operating parameter(s) that are the indicator(s) of carbon mass feed rate (*e.g.*, screw feeder speed). The carbon injection system operational indicator used to provide additional verification of carbon injection system operation, including basis for selecting the indicator and operator response to the indicator alarm, shall be included in section (e)(6) of the site-specific operating manual required under § 60.54b(e) of this subpart.

(n) In place of periodic manual testing of mercury, cadmium, lead, or hydrogen chloride with EPA Reference Method 26, 26A, 29, or as an alternative ASTM D6784–02 (as applicable), the owner or operator of an affected facility may elect to install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring emissions discharged to the atmosphere and record the output of the system. The option to use a continuous emission monitoring system for mercury takes effect on the date of approval of the site-specific monitoring plan required in paragraph (n)(13) and (o) of this section. The option to use a continuous emission monitoring system for cadmium, lead, or hydrogen chloride takes effect on the date a final performance specification applicable to cadmium, lead, or hydrogen chloride monitor is published in the FEDERAL REGISTER or the date of approval of the site-specific monitoring plan required in paragraphs (n)(13) and (o) of this section. The owner or operator of an affected facility who elects to continuously monitor emissions instead of conducting manual performance testing shall install, calibrate, maintain, and operate a continuous emission monitoring system and shall comply with the requirements specified in paragraphs (n)(1) through (n)(13) of this section.

(1) Notify the Administrator one month before starting use of the system.

(2) Notify the Administrator one month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than

180 days after the date of initial start-up of the affected facility, as specified under §60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of the continuous monitoring system if the owner or operator was previously determining compliance by Method 26, 26A, 29, or as an alternative ASTM D6784–02 (as applicable) performance tests, whichever is later.

(5) The owner or operator may request that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(6) The owner or operator shall conduct an initial performance test for emissions as required under §60.8 of subpart A of this part. Compliance with the emission limits shall be determined by using the continuous emission monitoring system specified in paragraph (n) of this section to measure emissions and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19, section 12.4.1.

(7) Compliance with the emission limits shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data.

(8) Beginning on April 28, 2008 for mercury and on the date two years after final performance specifications for cadmium, lead or hydrogen chloride monitors are published in the FEDERAL REGISTER or the date two years after approval of a site-specific monitoring plan, valid continuous monitoring system hourly averages shall be obtained as specified in paragraphs (n)(8)(i) and (n)(8)(ii) of this section for at least 90 percent of the operating hours per calendar quarter and 95 percent of the operating hours per calendar year that the affected facility is combusting municipal solid waste.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) Each 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(9) The 1-hour arithmetic averages required under paragraph (n)(7) of this section shall be expressed in micrograms per dry standard cubic meter for mercury, cadmium, lead and parts per million dry volume for hydrogen chloride corrected to 7 percent oxygen (dry basis) and shall be used to calculate the 24-hour daily arithmetic (block) average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.

(10) All valid continuous emission monitoring system data shall be used in calculating average emission concentrations even if the minimum continuous emission monitoring system data requirements of paragraph (n)(8) of this section are not met.

(11) The continuous emission monitoring system shall be operated according to the performance specifications in paragraphs (n)(11)(i) through (n)(11)(iii) of this section or the approved site-specific monitoring plan.

(i) For mercury, Performance Specification 12A in appendix B of this part.

(ii)–(iii) [Reserved]

(12) During each relative accuracy test run of the continuous emission monitoring system required by the performance specifications in paragraph (n)(11) of this section, mercury, cadmium, lead, hydrogen chloride, and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (n)(12)(i) through (n)(12)(iii) of this section.

(i) For mercury, cadmium, and lead, EPA Reference Method 29 or as an alternative ASTM D6784–02 shall be used.

(ii) For hydrogen chloride, EPA Reference Method 26 or 26A shall be used.

(iii) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, as applicable shall be used.

(13) The owner or operator who elects to install, calibrate, maintain, and operate a continuous emission monitoring system for mercury, cadmium,

lead, or hydrogen chloride must develop and implement a site-specific monitoring plan as specified in paragraph (o) of this section. The owner or operator who relies on a performance specification may refer to that document in addressing applicable procedures and criteria.

(14) When emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, parametric monitoring data shall be obtained by using other monitoring systems as approved by EPA.

(o) The owner or operator who elects to install, calibrate, maintain, and operate a continuous emission monitoring system for mercury, cadmium, lead, or hydrogen chloride must develop and submit for approval by EPA, a site-specific mercury, cadmium, lead, or hydrogen chloride monitoring plan that addresses the elements and requirements in paragraphs (o)(1) through (o)(7) of this section.

(1) Installation of the continuous emission monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(2) Performance and equipment specifications for the sample interface, the pollutant concentration analyzer, and the data collection and reduction system.

(3) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations).

(4) Provisions for periods when the continuous emission monitoring system is out of control as described in paragraphs (o)(4)(i) through (o)(4)(iii) of this section.

(i) A continuous emission monitoring system is out of control if either of the conditions in paragraphs (o)(4)(i)(A) or (o)(4)(ii)(B) of this section are met.

(A) The zero (low-level), mid-level (if applicable), or high-level calibration drift exceeds two times the applicable calibration drift specification in the applicable performance specification or in the relevant standard; or

(B) The continuous emission monitoring system fails a performance test audit (*e.g.*, cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit.

(ii) When the continuous emission monitoring system is out of control as defined in paragraph (o)(4)(i) of this section, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests that 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 continuous emission monitoring system is out of control, recorded data shall not be used in data averages and calculations or to meet any data availability requirements in paragraph (n)(8) of this section.

(iii) The owner or operator of a continuous emission monitoring system that is out of control as defined in paragraph (o)(4) 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 annual or semiannual compliance reports required in § 60.59b(g) or (h).

(5) Ongoing data quality assurance procedures for continuous emission monitoring systems as described in paragraphs (o)(5)(i) and (o)(5)(ii) of this section.

(i) Develop and implement a continuous emission monitoring system quality control program. As part of the quality control program, the owner or operator shall develop and submit to EPA for approval, upon request, a site-specific performance evaluation test plan for the continuous emission monitoring system performance evaluation required in paragraph (o)(5)(ii) of this

section. In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the operations described in paragraphs (o)(7)(i)(A) through (o)(7)(i)(F) of this section.

(A) Initial and any subsequent calibration of the continuous emission monitoring system;

(B) Determination and adjustment of the calibration drift of the continuous emission monitoring system;

(C) Preventive maintenance of the continuous emission monitoring system, including spare parts inventory;

(D) Data recording, calculations, and reporting;

(E) Accuracy audit procedures, including sampling and analysis methods; and

(F) Program of corrective action for a malfunctioning continuous emission monitoring system.

(ii) 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 quality assurance program. Data quality objectives are the pre-evaluation expectations of precision, accuracy, and completeness of data. The internal quality assurance program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of continuous emission monitoring system performance, for example, plans for relative accuracy testing using the appropriate reference method in § 60.58b(n)(12) of this section. The external quality assurance program shall include, at a minimum, systems audits that include the opportunity for onsite evaluation by the Administrator of instrument calibration, data validation, sample logging, and documentation of quality control data and field maintenance activities.

(6) Conduct a performance evaluation of each continuous emission monitoring system in accordance with the site-specific monitoring plan.

(7) Operate and maintain the continuous emission monitoring system in continuous operation according to the site-specific monitoring plan.

(p) In place of periodic manual testing of dioxin/furan or mercury with EPA Reference Method 23, 29, or as an alternative ASTM D6784–02 (as applicable), the owner or operator of an affected facility may elect to install, calibrate, maintain, and operate a continuous automated sampling system for determining emissions discharged to the atmosphere. This option takes effect on the date a final performance specification applicable to such continuous automated sampling systems is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan required in paragraphs (p)(10) and (q) of this section. The owner or operator of an affected facility who elects to use a continuous automated sampling system to determine emissions instead of conducting manual performance testing shall install, calibrate, maintain, and operate the sampling system and conduct analyses in compliance with the requirements specified in paragraphs (p)(1) through (p)(12) of this section.

(1) Notify the Administrator one month before starting use of the system.

(2) Notify the Administrator one month before stopping use of the system.

(3) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of the continuous monitoring system if the owner or operator was previously determining compliance by manual performance testing using Method 23, 29, or as an alternative ASTM D6784–02 (as applicable), whichever is later.

(4) The owner or operator may request that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(5) The owner or operator shall conduct an initial performance test for emissions as required under § 60.8 of subpart A of this part. Compliance

with the emission limits shall be determined by using the continuous automated sampling system specified in paragraph (p) of this section to collect integrated samples and analyze emissions for the time period specified in paragraphs (p)(5)(i) and (ii) of this section.

(i) For dioxin/furan, the continuous automated sampling system shall collect an integrated sample over each 2-week period. The collected sample shall be analyzed using Method 23.

(ii) For mercury, the continuous automated sampling system shall collect an integrated sample over each 24-hour daily period and the sample shall be analyzed according to the applicable final performance specification or the approved site-specific monitoring plan required by paragraph (q) of this section.

(6) Compliance with the emission limits shall be determined based on 2-week emission concentrations for dioxin/furan and on the 24-hour daily emission concentrations for mercury using samples collected at the system outlet. The emission concentrations shall be expressed in nanograms per dry standard cubic meter (total mass) for dioxin/furan and micrograms per dry standard cubic meter for mercury, corrected to 7 percent oxygen (dry basis).

(7) Beginning on the date two years after the respective final performance specification for continuous automated sampling systems for dioxin/furan or mercury is published in the FEDERAL REGISTER or two years after approval of a site-specific monitoring plan, the continuous automated sampling system must be operated and collect emissions for at least 90 percent of the operating hours per calendar quarter and 95 percent of the operating hours per calendar year that the affected facility is combusting municipal solid waste.

(8) All valid data shall be used in calculating emission concentrations.

(9) The continuous automated sampling system shall be operated according to the final performance specification in paragraphs (p)(9)(i) or (p)(9)(ii) of this section or the approved site-specific monitoring plan.

(i)–(ii) [Reserved]

(10) The owner or operator who elects to install, calibrate, maintain, and operate a continuous automated sampling system for dioxin/furan or mercury must develop and implement a site-specific monitoring plan as specified in paragraph (q) of this section. The owner or operator who relies on a performance specification may refer to that document in addressing applicable procedures and criteria.

(11) When emissions data are not obtained because of continuous automated sampling system breakdowns, repairs, quality assurance checks, or adjustments, parametric monitoring data shall be obtained by using other monitoring systems as approved by EPA.

(q) The owner or operator who elects to install, calibrate, maintain, and operate a continuous automated sampling system for dioxin/furan or mercury must develop and submit for approval by EPA, a site-specific monitoring plan that has sufficient detail to assure the validity of the continuous automated sampling system data and that addresses the elements and requirements in paragraphs (q)(1) through (q)(7) of this section.

(1) Installation of the continuous automated sampling system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(2) Performance and equipment specifications for the sample interface, the pollutant concentration analytical method, and the data collection system.

(3) Performance evaluation procedures and acceptance criteria.

(4) Provisions for periods when the continuous automated sampling system is malfunctioning or is out of control as described in paragraphs (q)(4)(i) through (q)(4)(iii) of this section.

(i) The site-specific monitoring plan shall identify criteria for determining that the continuous automated sampling system is out of control. This shall include periods when the sampling system is not collecting a representative sample or is malfunctioning, or when the analytical method

does not meet site-specific quality criteria established in paragraph (q)(5) of this section.

(ii) When the continuous automated sampling system is out of control as defined in paragraph (q)(4)(i) of this section, the owner or operator shall take the necessary corrective action and shall repeat all necessary tests that indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are within the applicable limits. The out-of-control period includes all hours that the sampling system was not collecting a representative sample or was malfunctioning, or hours represented by a sample for which the analysis did not meet the relevant quality criteria. Emissions data obtained during an out-of-control period shall not be used in determining compliance with the emission limits or to meet any data availability requirements in paragraph (p)(8) of this section.

(iii) The owner or operator of a continuous automated sampling system that is out of control as defined in paragraph (q)(4) 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 annual or semiannual compliance reports required in § 60.59b(g) or (h).

(5) Ongoing data quality assurance procedures for continuous automated sampling systems as described in paragraphs (q)(5)(i) and (q)(5)(ii) of this section.

(i) Develop and implement a continuous automated sampling system and analysis quality control program. As part of the quality control program, the owner or operator shall develop and submit to EPA for approval, upon request, a site-specific performance evaluation test plan for the continuous automated sampling system performance evaluation required in paragraph (q)(5)(ii) of this section. In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the operations described in paragraphs (q)(7)(i)(A) through (q)(7)(i)(F) of this section.

(A) Correct placement, installation of the continuous automated sampling system such that the system is collecting a representative sample of gas;

(B) Initial and subsequent calibration of flow such that the sample collection rate of the continuous automated sampling system is known and verifiable;

(C) Procedures to assure representative (*e.g.*, proportional or isokinetic) sampling;

(D) Preventive maintenance of the continuous automated sampling system, including spare parts inventory and procedures for cleaning equipment, replacing sample collection media, or other servicing at the end of each sample collection period;

(E) Data recording and reporting, including an automated indicator and recording device to show when the continuous automated monitoring system is operating and collecting data and when it is not collecting data;

(F) Accuracy audit procedures for analytical methods; and

(G) Program of corrective action for a malfunctioning continuous automated sampling system.

(ii) 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 quality assurance program. Data quality objectives are the pre-evaluation expectations of precision, accuracy, and completeness of data. The internal quality assurance program shall include, at a minimum, the activities planned by routine operators and analysts to provide an assessment of continuous automated sampling system performance, for example, plans for relative accuracy testing using the appropriate reference method in 60.58b(p)(3), and an assessment of quality of analysis results. The external quality assurance 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.

(6) Conduct a performance evaluation of each continuous automated sampling system in accordance with the site-specific monitoring plan.

(7) Operate and maintain the continuous automated sampling system in continuous operation according to the site-specific monitoring plan.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997; 65 FR 61753, Oct. 17, 2000; 66 FR 57827, Nov. 16, 2001; 71 FR 27337, May 10, 2006]

§ 60.59b Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility with a capacity to combust greater than 250 tons per day shall submit, on or before the date the application for a construction permit is submitted under 40 CFR part 51, subpart I, or part 52, as applicable, the items specified in paragraphs (a)(1) through (a)(4) of this section.

(1) The preliminary and final draft materials separation plans required by § 60.57b(a)(1) and (a)(5).

(2) A copy of the notification of the public meeting required by § 60.57b(a)(1)(ii).

(3) A transcript of the public meeting required by § 60.57b(a)(2).

(4) A copy of the document summarizing responses to public comments required by § 60.57b(a)(3).

(b) The owner or operator of an affected facility with a capacity to combust greater than 250 tons per day shall submit a notification of construction, which includes the information specified in paragraphs (b)(1) through (b)(5) of this section.

(1) Intent to construct.

(2) Planned initial startup date.

(3) The types of fuels that the owner or operator plans to combust in the affected facility.

(4) The municipal waste combustor unit capacity, and supporting capacity calculations prepared in accordance with § 60.58b(j).

(5) Documents associated with the siting requirements under § 60.57b (a) and (b), as specified in paragraphs (b)(5)(i) through (b)(5)(v) of this section.

(i) The siting analysis required by § 60.57b (b)(1) and (b)(2).

(ii) The final materials separation plan for the affected facility required by § 60.57b(a)(10).

(iii) A copy of the notification of the public meeting required by § 60.57b(b)(3)(ii).

(iv) A transcript of the public meeting required by § 60.57b(b)(4).

(v) A copy of the document summarizing responses to public comments required by § 60.57b (a)(9) and (b)(5).

(c) The owner or operator of an air curtain incinerator subject to the opacity limit under § 60.56b shall provide a notification of construction that includes the information specified in paragraphs (b)(1) through (b)(4) of this section.

(d) The owner or operator of an affected facility subject to the standards under §§ 60.52b, 60.53b, 60.54b, 60.55b, and 60.57b shall maintain records of the information specified in paragraphs (d)(1) through (d)(15) of this section, as applicable, for each affected facility for a period of at least 5 years.

(1) The calendar date of each record.

(2) The emission concentrations and parameters measured using continuous monitoring systems as specified under paragraphs (d)(2)(i) and (d)(2)(ii) of this section.

(i) The measurements specified in paragraphs (d)(2)(i)(A) through (d)(2)(i)(F) of this section shall be recorded and be available for submittal to the Administrator or review on site by an EPA or State inspector.

(A) All 6-minute average opacity levels as specified under § 60.58b(c).

(B) All 1-hour average sulfur dioxide emission concentrations as specified under § 60.58b(e).

(C) All 1-hour average nitrogen oxides emission concentrations as specified under § 60.58b(h).

(D) All 1-hour average carbon monoxide emission concentrations, municipal waste combustor unit load measurements, and particulate matter control device inlet temperatures as specified under § 60.58b(i).

(E) For owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, all 1-

hour average particulate matter, cadmium, lead, mercury, or hydrogen chloride emission concentrations as specified under § 60.58b(n).

(ii) The average concentrations and percent reductions, as applicable, specified in paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(F) of this section shall be computed and recorded, and shall be available for submittal to the Administrator or review on-site by an EPA or State inspector.

(A) All 24-hour daily geometric average sulfur dioxide emission concentrations and all 24-hour daily geometric average percent reductions in sulfur dioxide emissions as specified under § 60.58b(e).

(B) All 24-hour daily arithmetic average nitrogen oxides emission concentrations as specified under § 60.58b(h).

(C) All 4-hour block or 24-hour daily arithmetic average carbon monoxide emission concentrations, as applicable, as specified under § 60.58b(i).

(D) All 4-hour block arithmetic average municipal waste combustor unit load levels and particulate matter control device inlet temperatures as specified under § 60.58b(i).

(E) For owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, all 24-hour daily arithmetic average particulate matter, cadmium, lead, mercury, or hydrogen chloride emission concentrations as specified under § 60.58b(n).

(F) For owners and operators who elect to use a continuous automated sampling system to monitor mercury or dioxin/furan instead of conducting performance testing using EPA manual test methods, all integrated 24-hour mercury concentrations or all integrated 2-week dioxin/furan concentrations as specified under § 60.586(p).

(3) Identification of the calendar dates when any of the average emission concentrations, percent reductions, or operating parameters recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(F) of this section, or the opacity levels recorded under paragraph (d)(2)(i)(A) of this section are above the applicable limits, with reasons for such exceedances and a description of corrective actions taken.

(4) For affected facilities that apply activated carbon for mercury or dioxin/furan control, the records specified in paragraphs (d)(4)(i) through (d)(4)(v) of this section.

(i) The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated as required under § 60.58b(m)(1)(i) of this section during the initial mercury performance test and all subsequent annual performance tests, with supporting calculations.

(ii) The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated as required under § 60.58b(m)(1)(ii) of this section during the initial dioxin/furan performance test and all subsequent annual performance tests, with supporting calculations.

(iii) The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated for each hour of operation as required under § 60.58b(m)(3)(ii) of this section, with supporting calculations.

(iv) The total carbon usage for each calendar quarter estimated as specified by paragraph 60.58b(m)(3) of this section, with supporting calculations.

(v) Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., screw feeder speed).

(5) [Reserved]

(6) Identification of the calendar dates and times (hours) for which valid hourly data specified in paragraphs (d)(6)(i) through (d)(6)(vi) of this section have not been obtained, or continuous automated sampling systems were not operated as specified in paragraph (d)(6)(vii) of this section, including reasons for not obtaining the data and a description of corrective actions taken.

(i) Sulfur dioxide emissions data;

(ii) Nitrogen oxides emissions data;

(iii) Carbon monoxide emissions data;

(iv) Municipal waste combustor unit load data;

(v) Particulate matter control device temperature data; and

(vi) For owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury,

or hydrogen chloride emissions instead of performance testing by EPA manual test methods, particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions data.

(vii) For owners and operators who elect to use continuous automated sampling systems for dioxins/furans or mercury as allowed under ''60.58b(p) and (q), dates and times when the sampling systems were not operating or were not collecting a valid sample.

(7) Identification of each occurrence that sulfur dioxide emissions data, nitrogen oxides emissions data, particulate matter emissions data, cadmium emissions data, lead emissions data, mercury emissions data, hydrogen chloride emissions data, or dioxin/furan emissions data (for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride, or who elect to use continuous automated sampling systems for dioxin/furan or mercury emissions, instead of conducting performance testing using EPA manual test methods) or operational data (*i.e.*, carbon monoxide emissions, unit load, and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data.

(8) The results of daily drift tests and quarterly accuracy determinations for sulfur dioxide, nitrogen oxides, and carbon monoxide continuous emission monitoring systems, as required under appendix F of this part, procedure 1.

(9) The test reports documenting the results of the initial performance test and all annual performance tests listed in paragraphs (d)(9)(i) and (d)(9)(ii) of this section shall be recorded along with supporting calculations.

(i) The results of the initial performance test and all annual performance tests conducted to determine compliance with the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission limits.

(ii) For the initial dioxin/furan performance test and all subsequent dioxin/furan performance tests recorded under paragraph (d)(9)(i) of this section, the maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device temperature (for each particulate matter control device).

(10) An owner or operator who elects to continuously monitor emissions instead of performance testing by EPA manual methods must maintain records specified in paragraphs (10)(i) through (iii) of this section.

(i) For owners and operators who elect to continuously monitor particulate matter instead of conducting performance testing using EPA manual test methods), as required under appendix F of this part, procedure 2, the results of daily drift tests and quarterly accuracy determinations for particulate matter.

(ii) For owners and operators who elect to continuously monitor cadmium, lead, mercury, or hydrogen chloride instead of conducting EPA manual test methods, the results of all quality evaluations, such as daily drift tests and periodic accuracy determinations, specified in the approved site-specific performance evaluation test plan required by § 60.58b(o)(5).

(iii) For owners and operators who elect to use continuous automated sampling systems for dioxin/furan or mercury, the results of all quality evaluations specified in the approved site-specific performance evaluation test plan required by § 60.58b(q)(5).

(11) For each affected facility subject to the siting provisions under § 60.57b, the siting analysis, the final materials separation plan, a record of the location and date of the public meetings, and the documentation of the responses to public comments received at the public meetings.

(12) The records specified in paragraphs (d)(12)(i) through (d)(12)(iv) of this section.

(i) Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program as required by § 60.54b(a) including the dates of initial and renewal certifications and documentation of current certification.

(ii) Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program as required by §60.54b(b) including the dates of initial and renewal certifications and documentation of current certification.

(iii) Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have completed the EPA municipal waste combustor operator training course or a State-approved equivalent course as required by §60.54b(d) including documentation of training completion.

(iv) Records of when a certified operator is temporarily off site. Include two main items:

(A) If the certified chief facility operator and certified shift supervisor are off site for more than 12 hours, but for 2 weeks or less, and no other certified operator is on site, record the dates that the certified chief facility operator and certified shift supervisor were off site.

(B) When all certified chief facility operators and certified shift supervisors are off site for more than 2 weeks and no other certified operator is on site, keep records of four items:

(*1*) Time of day that all certified persons are off site.

(*2*) The conditions that cause those people to be off site.

(*3*) The corrective actions taken by the owner or operator of the affected facility to ensure a certified chief facility operator or certified shift supervisor is on site as soon as practicable.

(*4*) Copies of the written reports submitted every 4 weeks that summarize the actions taken by the owner or operator of the affected facility to ensure that a certified chief facility operator or certified shift supervisor will be on site as soon as practicable.

(13) Records showing the names of persons who have completed a review of the operating manual as required by §60.54b(f) including the date of the initial review and subsequent annual reviews.

(14) For affected facilities that apply activated carbon, identification of the calendar dates when the average carbon mass feed rates recorded under paragraph (d)(4)(iii) of this section were less than either of the hourly carbon feed rates estimated during performance tests for mercury emissions and recorded under paragraphs (d)(4)(i) and (d)(4)(ii) of this section, respectively, with reasons for such feed rates and a description of corrective actions taken. For affected facilities that apply activated carbon, identification of the calendar dates when the average carbon mass feed rates recorded under paragraph (d)(4)(iii) of this section were less than either of the hourly carbon feed rates estimated during performance tests for dioxin/furan emissions and recorded under paragraphs (d)(4)(i) and (d)(4)(ii) of this section, respectively, with reasons for such feed rates and a description of corrective actions taken.

(15) For affected facilities that apply activated carbon for mercury or dioxin/furan control, identification of the calendar dates when the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate (e.g., screw feeder speed) recorded under paragraph (d)(4)(v) of this section are below the level(s) estimated during the performance tests as specified in §60.58b(m)(1)(i) and §60.58b(m)(1)(ii) of this section, with reasons for such occurrences and a description of corrective actions taken.

(e) The owner or operator of an air curtain incinerator subject to the opacity limit under §60.56b shall maintain records of results of the initial opacity performance test and subsequent performance tests required by §60.58b(l) for a period of at least 5 years.

(f) The owner or operator of an affected facility shall submit the information specified in paragraphs (f)(1) through (f)(6) of this section in the initial performance test report.

(1) The initial performance test data as recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section for the initial performance test for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, and particulate

matter control device inlet temperature.

(2) The test report documenting the initial performance test recorded under paragraph (d)(9) of this section for particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emissions.

(3) The performance evaluation of the continuous emission monitoring system using the applicable performance specifications in appendix B of this part.

(4) The maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device inlet temperature(s) established during the initial dioxin/furan performance test as recorded under paragraph (d)(9) of this section.

(5) For affected facilities that apply activated carbon injection for mercury control, the owner or operator shall submit the average carbon mass feed rate recorded under paragraph (d)(4)(i) of this section.

(6) For those affected facilities that apply activated carbon injection for dioxin/furan control, the owner or operator shall submit the average carbon mass feed rate recorded under paragraph (d)(4)(ii) of this section.

(g) Following the first year of municipal waste combustor operation, the owner or operator of an affected facility shall submit an annual report that includes the information specified in paragraphs (g)(1) through (g)(5) of this section, as applicable, no later than February 1 of each year following the calendar year in which the data were collected (once the unit is subject to permitting requirements under title V of the Act, the owner or operator of an affected facility must submit these reports semiannually).

(1) A summary of data collected for all pollutants and parameters regulated under this subpart, which includes the information specified in paragraphs (g)(1)(i) through (g)(1)(v) of this section.

(i) A list of the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels achieved during the performance tests recorded under paragraph (d)(9) of this section.

(ii) A list of the highest emission level recorded for sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter, cadmium, lead, mercury, hydrogen chloride, and dioxin/furan (for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, hydrogen chloride, and dioxin/furan emissions instead of conducting performance testing using EPA manual test methods), municipal waste combustor unit load level, and particulate matter control device inlet temperature based on the data recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(E) of this section.

(iii) List the highest opacity level measured, based on the data recorded under paragraph (d)(2)(i)(A) of this section.

(iv) Periods when valid data were not obtained as described in paragraphs (g)(1)(iv)(A) through (g)(1)(iv)(C) of this section.

(A) The total number of hours per calendar quarter and hours per calendar year that valid data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, or particulate matter control device temperature data were not obtained based on the data recorded under paragraph (d)(6) of this section.

(B) For owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, and hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, the total number of hours per calendar quarter and hours per calendar year that valid data for particulate matter, cadmium, lead, mercury, and hydrogen chloride were not obtained based on the data recorded under paragraph (d)(6) of this section. For each continuously monitored pollutant or parameter, the hours of valid emissions data per calendar quarter and per calendar year expressed as a percent of the hours per calendar quarter or year that the affected facility was operating and combusting municipal solid waste.

(C) For owners and operators who elect to use continuous automated sampling systems for dioxin/furan or mercury, the total number of hours per

calendar quarter and hours per calendar year that the sampling systems were not operating or were not collecting a valid sample based on the data recorded under paragraph (d)(6)(vii) of this section. Also, the number of hours during which the continuous automated sampling system was operating and collecting a valid sample as a percent of hours per calendar quarter or year that the affected facility was operating and combusting municipal solid waste.

(v) Periods when valid data were excluded from the calculation of average emission concentrations or parameters as described in paragraphs (g)(1)(v)(A) through (g)(1)(v)(C) of this section.

(A) The total number of hours that data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature were excluded from the calculation of average emission concentrations or parameters based on the data recorded under paragraph (d)(7) of this section.

(B) For owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride emissions instead of conducting performance testing using EPA manual test methods, the total number of hours that data for particulate matter, cadmium, lead, mercury, or hydrogen chloride were excluded from the calculation of average emission concentrations or parameters based on the data recorded under paragraph (d)(7) of this section.

(C) For owners and operators who elect to use continuous automated sampling systems for dioxin/furan or mercury, the total number of hours that data for mercury and dioxin/furan were excluded from the calculation of average emission concentrations or parameters based on the data recorded under paragraph (d)(7) of this section.

(2) The summary of data reported under paragraph (g)(1) of this section shall also provide the types of data specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this section for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(3) The summary of data including the information specified in paragraphs (g)(1) and (g)(2) of this section shall highlight any emission or parameter levels that did not achieve the emission or parameter limits specified under this subpart.

(4) A notification of intent to begin the reduced dioxin/furan performance testing schedule specified in § 60.58b(g)(5)(iii) of this section during the following calendar year and notification of intent to apply the average carbon mass feed rate and associated carbon injection system operating parameter levels as established in § 60.58b(m) to similarly designed and equipped units on site.

(5) Documentation of periods when all certified chief facility operators and certified shift supervisors are off site for more than 12 hours.

(h) The owner or operator of an affected facility shall submit a semiannual report that includes the information specified in paragraphs (h)(1) through (h)(5) of this section for any recorded pollutant or parameter that does not comply with the pollutant or parameter limit specified under this subpart, according to the schedule specified under paragraph (h)(6) of this section.

(1) The semiannual report shall include information recorded under paragraph (d)(3) of this section for sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter, cadmium, lead, mercury, hydrogen chloride, dioxin/furan (for owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride, or who elect to use continuous automated sampling systems for dioxin/furan or mercury emissions, instead of conducting performance testing using EPA manual test methods) municipal waste combustor unit load level, particulate matter control device inlet temperature, and opacity.

(2) For each date recorded as required by paragraph (d)(3) of this section and reported as required by paragraph (h)(1) of this section, the semiannual report shall include the sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device

inlet temperature, or opacity data, as applicable, recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) and (d)(2)(i)(A) of this section, as applicable.

(3) If the test reports recorded under paragraph (d)(9) of this section document any particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels that were above the applicable pollutant limits, the semiannual report shall include a copy of the test report documenting the emission levels and the corrective actions taken.

(4) The semiannual report shall include the information recorded under paragraph (d)(15) of this section for the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate.

(5) For each operating date reported as required by paragraph (h)(4) of this section, the semiannual report shall include the carbon feed rate data recorded under paragraph (d)(4)(iii) of this section.

(6) Semiannual reports required by paragraph (h) of this section shall be submitted according to the schedule specified in paragraphs (h)(6)(i) and (h)(6)(ii) of this section.

(i) If the data reported in accordance with paragraphs (h)(1) through (h)(5) of this section were collected during the first calendar half, then the report shall be submitted by August 1 following the first calendar half.

(ii) If the data reported in accordance with paragraphs (h)(1) through (h)(5) of this section were collected during the second calendar half, then the report shall be submitted by February 1 following the second calendar half.

(i) The owner or operator of an air curtain incinerator subject to the opacity limit under § 60.56b shall submit the results of the initial opacity performance test and all subsequent annual performance tests recorded under paragraph (e) of this section. Annual performance tests shall be submitted by February 1 of the year following the year of the performance test.

(j) All reports specified under paragraphs (a), (b), (c), (f), (g), (h), and (i) of this section shall be submitted as a paper copy, postmarked on or before the submittal dates specified under these paragraphs, and maintained onsite as a paper copy for a period of 5 years.

(k) All records specified under paragraphs (d) and (e) of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Administrator.

(l) If the owner or operator of an affected facility would prefer a different annual or semiannual date for submitting the periodic reports required by paragraphs (g), (h) and (i) of this section, then the dates may be changed by mutual agreement between the owner or operator and the Administrator according to the procedures specified in § 60.19(c) of subpart A of this part.

(m) Owners and operators who elect to continuously monitor particulate matter, cadmium, lead, mercury, or hydrogen chloride, or who elect to use continuous automated sampling systems for dioxin/furan or mercury emissions, instead of conducting performance testing using EPA manual test methods must notify the Administrator one month prior to starting or stopping use of the particulate matter, cadmium, lead, mercury, hydrogen chloride, and dioxin/furan continuous emission monitoring systems or continuous automated sampling systems.

(n) *Additional recordkeeping and reporting requirements for affected facilities with continuous cadmium, lead, mercury, or hydrogen chloride monitoring systems.* In addition to complying with the requirements specified in paragraphs (a) through (m) of this section, the owner or operator of an affected source who elects to install a continuous emission monitoring system for cadmium, lead, mercury, or hydrogen chloride as specified in § 60.58b(n), shall maintain the records in paragraphs (n)(1) through (n)(10) of this section and report the information in paragraphs (n)(11) through (n)(12) of this section, relevant to the continuous emission monitoring system:

(1) All required continuous emission monitoring measurements (including monitoring data recorded during unavoidable continuous emission monitoring system breakdowns and out-of-control periods);

(2) The date and time identifying each period during which the continuous emission monitoring system was inoperative except for zero (low-level) and high-level checks;

(3) The date and time identifying each period during which the continuous emission monitoring system was out of control, as defined in § 60.58b(o)(4);

(4) 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 standard, that occurs during startups, shutdowns, and malfunctions of the affected source;

(5) 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 standard, that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;

(6) The nature and cause of any malfunction (if known);

(7) The corrective action taken to correct any malfunction or preventive measures adopted to prevent further malfunctions;

(8) The nature of the repairs or adjustments to the continuous emission monitoring system that was inoperative or out of control;

(9) All procedures that are part of a quality control program developed and implemented for the continuous emission monitoring system under § 60.58b(o);

(10) When more than one continuous emission monitoring system 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 continuous emission monitoring system.

(11) Submit to EPA for approval, the site-specific monitoring plan required by § 60.58b(n)(13) and § 60.58b(o), including the site-specific performance evaluation test plan for the continuous emission monitoring system required by § 60.58(b)(o)(5). The owner or operator shall maintain copies of the site-specific monitoring plan on record for the life of the affected source to be made available for inspection, upon request, by the Administrator. If the site-specific monitoring plan is revised and approved, 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.

(12) Submit information concerning all out-of-control periods for each continuous emission monitoring system, including start and end dates and hours and descriptions of corrective actions taken, in the annual or semiannual reports required in paragraphs (g) or (h) of this section.

(o) *Additional recordkeeping and reporting requirements for affected facilities with continuous automated sampling systems for dioxin/furan or mercury monitoring*. In addition to complying with the requirements specified in paragraphs (a) through (m) of this section, the owner or operator of an affected source who elects to install a continuous automated sampling system for dioxin/furan or mercury, as specified in § 60.58b(p), shall maintain the records in paragraphs (o)(1) through (o)(10) of this section and report the information in (o)(11) and (o)(12) of this section, relevant to the continuous automated sampling system:

(1) All required 24-hour integrated mercury concentration or 2-week integrated dioxin/furan concentration data (including any data obtained during unavoidable system breakdowns and out-of-control periods);

(2) The date and time identifying each period during which the continuous automated sampling system was inoperative;

(3) The date and time identifying each period during which the continuous automated sampling system was out of control, as defined in § 60.58b(q)(4);

(4) 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 standard, that occurs during startups, shutdowns, and malfunctions of the affected source;

(5) 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 standard, that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;

(6) The nature and cause of any malfunction (if known);

(7) The corrective action taken to correct any malfunction or preventive measures adopted to prevent further malfunctions;

(8) The nature of the repairs or adjustments to the continuous automated sampling system that was inoperative or out of control;

(9) All procedures that are part of a quality control program developed and implemented for the continuous automated sampling system under § 60.58b(q);

(10) When more than one continuous automated sampling system 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 system.

(11) Submit to EPA for approval, the site-specific monitoring plan required by § 60.58b(p)(11) and § 60.58b(q) including the site-specific performance evaluation test plan for the continuous emission monitoring system required by § 60.58(b)(q)(5). The owner or operator shall maintain copies of the site-specific monitoring plan on record for the life of the affected source to be made available for inspection, upon request, by the Administrator. If the site-specific monitoring plan is revised and approved, 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.

(12) Submit information concerning all out-of-control periods for each continuous automated sampling system, including start and end dates and hours and descriptions of corrective actions taken in the annual or semiannual reports required in paragraphs (g) or (h) of this section.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45121, 45127, Aug. 25, 1997; 71 FR 27345, May 10, 2006]

Subpart Ec—Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators

SOURCE: 62 FR 48382, Sept. 15, 1997, unless otherwise noted.

§ 60.50c Applicability and delegation of authority.

(a) Except as provided in paragraphs (b) through (h) of this section, the affected facility to which this subpart applies is each individual hospital/medical/infectious waste incinerator (HMIWI):

(1) For which construction is commenced after June 20, 1996 but no later than December 1, 2008; or

(2) For which modification is commenced after March 16, 1998 but no later than April 6, 2010.

(3) For which construction is commenced after December 1, 2008; or

(4) For which modification is commenced after April 6, 2010.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in § 60.51c) is burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactivewaste and/or chemotherapeutic waste is burned.

(c) Any co-fired combustor (defined in § 60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative amounts of hospital waste, medical/infectious waste, and other fuels and wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital

waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(d) Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under subpart Cb, Ea, or Eb of this part (standards or guidelines for certain municipal waste combustors) is not subject to this subpart.

(f) Any pyrolysis unit (defined in §60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI solely for the purpose of complying with emission guidelines under subpart Ce are not considered a modification and do not result in an existing HMIWI becoming subject to this subpart.

(i) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State:

(1) The requirements of Sec. 60.56c(i) establishing operating parameters when using controls other than those listed in Sec. 60.56c(d).

(2) Approval of alternative methods of demonstrating compliance under §60.8 including:

(i) Approval of CEMS for PM, HCl, multi-metals, and Hg where used for purposes of demonstrating compliance,

(ii) Approval of continuous automated sampling systems for dioxin/furan and Hg where used for purposes of demonstrating compliance, and

(iii) Approval of major alternatives to test methods;

(3) Approval of major alternatives to monitoring;

(4) Waiver of recordkeeping requirements; and

(5) Performance test and data reduction waivers under §60.8(b).

(j) Affected facilities subject to this subpart are not subject to the requirements of 40 CFR part 64.

(i) Approval of CEMS for PM, HCl, multi-metals, and Hg where used for purposes of demonstrating compliance,

(ii) Approval of continuous automated sampling systems for dioxin/furan and Hg where used for purposes of demonstrating compliance, and

(iii) Approval of major alternatives to test methods;

(3) Approval of major alternatives to monitoring;

(4) Waiver of recordkeeping requirements; and

(5) Performance test and data reduction waivers under §60.8(b).

(k) The requirements of this subpart shall become effective March 16, 1998

(l) Beginning September 15, 2000, or on the effective date of an EPA-approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, affected facilities subject to this subpart shall operate pursuant to a permit issued under the EPA approved State operating permit program.

(m) The requirements of this subpart as promulgated on September 15, 1997, shall apply to the affected facilities defined in paragraph (a)(1) and (2) of this section until the applicable compliance date of the requirements of subpart Ce of this part, as amended on October 6, 2009. Upon the compliance date of the requirements of the amended subpart Ce of this part, affected facilities as defined in paragraph (a) of this section are no longer subject to the requirements of this subpart, but are subject to the requirements of subpart Ce of this part, as amended on October 6, 2009, except where the emissions limits of this subpart as promulgated on September 15, 1997 are more stringent than the emissions limits of the amended subpart Ce of this part. Compliance with subpart Ce of this part, as amended on October 6, 2009 is required on or before the date 3 years after EPA approval of the State plan for States in which an affected facility as defined in paragraph (a) of this section is located (but not later than the date 5 years after promulgation of the amended subpart).

(n) The requirements of this subpart, as amended on October 6, 2009, shall become effective April 6, 2010.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51408, Oct. 6, 2009]

§ 60.51c Definitions.

Bag leak detection system means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light-scattering, light-transmittance, or other effects to monitor relative PM loadings.

Batch HMIWI means an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.

Biologicals means preparations made from living organisms and their products, including vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto.

Blood products means any product derived from human blood, including but not limited to blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc.

Body fluids means liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; and semen and vaginal secretions.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Co-fired combustor means a unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered ''other'' wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.

Commercial HMIWI means a HMIWI which offers incineration services for hospital/medical/infectious waste generated offsite by firms unrelated to the firm that owns the HMIWI.

Continuous emission monitoring system or *CEMS* means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

Continuous HMIWI means an HMIWI that is designed to allow waste charging and ash removal during combustion.

Dioxins/furans means the combined emissions of tetra-through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by EPA Reference Method 23.

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gases in the HMIWI exhaust stream forming a dry powder material.

Fabric filter or *baghouse* means an add-on air pollution control system that removes particulate matter (PM) and nonvaporous metals emissions by passing flue gas through filter bags.

Facilities manager means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's or operator's representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support services.

High-air phase means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.

Hospital means any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours

per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.

Hospital/medical/infectious waste incinerator or *HMIWI* or *HMIWI unit* means any device that combusts any amount of hospital waste and/or medical/infectious waste.

Hospital/medical/infectious waste incinerator operator or *HMIWI operator* means any person who operates, controls or supervises the day-to-day operation of an HMIWI.

Hospital waste means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

Infectious agent means any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.

Intermittent HMIWI means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

Large HMIWI means:

(1) Except as provided in (2);

(i) An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.

(2) The following are not large HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is less than or equal to 4,000 pounds per day.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

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. During periods of malfunction the operator shall operate within established parameters as much as possible, and monitoring of all applicable operating parameters shall continue until all waste has been combusted or until the malfunction ceases, whichever comes first.

Maximum charge rate means:

(1) For continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(2) For batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

Maximum design waste burning capacity means:

(1) For intermittent and continuous HMIWI,

$$C = P_V \times 15{,}000/8{,}500$$

Where:

C=HMIWI capacity, lb/hr

P_V=primary chamber volume, ft^3

15,000=primary chamber heat release rate factor, $Btu/ft^3/hr$

8,500=standard waste heating value, Btu/lb;

(2) For batch HMIWI,

$$C = P_V \times 4.5/8$$

Where:

C=HMIWI capacity, lb/hr

P_V=primary chamber volume, ft^3

4.5=waste density, lb/ft^3

8=typical hours of operation of a batch HMIWI, hours.

Maximum fabric filter inlet temperature means 110 percent of the lowest 3-hour average temperature at the inlet to the fabric filter (taken, at a minimum,

once every minute) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.

Maximum flue gas temperature means 110 percent of the lowest 3-hour average temperature at the outlet from the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the mercury (Hg) emission limit.

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in § 261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment mation; and domestic sewage materials identified in § 261.4(a)(1) of this chapter.

(1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

(3) Human blood and blood products including:

(i) Liquid waste human blood;

(ii) Products of blood;

(iii) Items saturated and/or dripping with human blood; or

(iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.

(4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

(5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

(6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

Medium HMIWI means:

(1) Except as provided in paragraph (2);

(i) An HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.

(2) The following are not medium HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

Minimum dioxin/furan sorbent flow rate means 90 percent of the highest 3-hour average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.

Minimum Hg sorbent flow rate means 90 percent of the highest 3-hour average Hg sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the Hg emission limit.

Minimum hydrogen chloride (HCl) sorbent flow rate means 90 percent of the highest 3-hour average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the HCl emission limit.

Minimum horsepower or amperage means 90 percent of the highest 3-hour average horsepower or amperage to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the applicable emission limits.

Minimum pressure drop across the wet scrubber means 90 percent of the highest 3-hour average pressure drop across the wet scrubber PM control device (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM emission limit.

Minimum reagent flow rate means 90 percent of the highest 3-hour average reagent flow rate at the inlet to the selective noncatalytic reduction technology (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the NO_X emissions limit.

Minimum scrubber liquor flow rate means 90 percent of the highest 3-hour average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with all applicable emission limits.

Minimum scrubber liquor pH means 90 percent of the highest 3-hour average liquor pH at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the HCl emission limit.

Minimum secondary chamber temperature means 90 percent of the highest 3-hour average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM, CO, dioxin/furan, and NO_X emissions limits.

Modification or *Modified HMIWI* means any change to an HMIWI unit after the effective date of these standards such that:

(1) The cumulative costs of the modifications, over the life of the unit, exceed 50 per centum of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or

(2) The change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.

Operation means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.

Particulate matter or *PM* means the total particulate matter emitted from an HMIWI as measured by EPA Reference Method 5 or EPA Reference Method 29.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Primary chamber means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

Pyrolysis means the endothermic gasification of hospital waste and/or medical/infectious waste using external energy.

Secondary chamber means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

Shutdown means the period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown shall commence no less than 2 hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

Small HMIWI means:

(1) Except as provided in (2);

(i) An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.

(2) The following are not small HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour;

(ii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day.

Standard conditions means a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup means the period of time between the activation of the system and the first charge to the unit. For batch HMIWI, startup means the period of time between activation of the system and ignition of the waste.

Wet scrubber means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51408, Oct. 6, 2009]

§ 60.52c Emission limits.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere:

(1) From an affected facility as defined in § 60.50c(a)(1) and (2), any gases that contain stack emissions in excess of the limits presented in Table 1A to this subpart.

(2) From an affected facility as defined in § 60.50c(a)(3) and (4), any gases that contain stack emissions in excess of the limits presented in Table 1B to this subpart.

(b) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere:

(1) From an affected facility as defined in § 60.50c(a)(1) and (2), any gases that exhibit greater than 10 percent opacity (6-minute block average).

(2) From an affected facility as defined in § 60.50c(a)(3) and (4), any gases that exhibit greater than 6 percent opacity (6-minute block average).

(c) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility as defined in § 60.50c(a)(1) and (2) and utilizing a large HMIWI, and in § 60.50c(a)(3) and (4), shall cause to be discharged into the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (*i.e.*, 9

minutes per 3-hour period), as determined by EPA Reference Method 22 of appendix A–1 of this part, except as provided in paragraphs (d) and (e) of this section.

(d) The emission limit specified in paragraph (c) of this section does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(e) The provisions specified in paragraph (c) of this section do not apply during maintenance and repair of ash conveying systems. Maintenance and/or repair shall not exceed 10 operating days per calendar quarter unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary maintenance and repairs of ash conveying systems shall be completed.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51409, Oct. 6, 2009]

§ 60.53c Operator training and qualification requirements.

(a) No owner or operator of an affected facility shall allow the affected facility to operate at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facility or available within 1 hour. The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.

(b) Operator training and qualification shall be obtained through a State-approved program or by completing the requirements included in paragraphs (c) through (g) of this section.

(c) Training shall be obtained by completing an HMIWI operator training course that includes, at a minimum, the following provisions:

(1) 24 hours of training on the following subjects:

(i) Environmental concerns, including pathogen destruction and types of emissions;

(ii) Basic combustion principles, including products of combustion;

(iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;

(iv) Combustion controls and monitoring;

(v) Operation of air pollution control equipment and factors affecting performance (if applicable);

(vi) Methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable);

(vii) Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;

(viii) Actions to correct malfunctions or conditions that may lead to malfunction;

(ix) Bottom and fly ash characteristics and handling procedures;

(x) Applicable Federal, State, and local regulations;

(xi) Work safety procedures;

(xii) Pre-startup inspections; and

(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Reference material distributed to the attendees covering the course topics.

(d) Qualification shall be obtained by:

(1) Completion of a training course that satisfies the criteria under paragraph (c) of this section; and

(2) Either 6 months experience as an HMIWI operator, 6 months experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation of two qualified HMIWI operators.

(e) Qualification is valid from the date on which the examination is passed or the completion of the required experience, whichever is later.

(f) To maintain qualification, the trained and qualified HMIWI operator shall complete and pass an annual review or refresher course of at least 4 hours covering, at a minimum, the following:

(1) Update of regulations;

(2) Incinerator operation, including startup and shutdown procedures;

(3) Inspection and maintenance;

(4) Responses to malfunctions or conditions that may lead to malfunction; and

(5) Discussion of operating problems encountered by attendees.

(g) A lapsed qualification shall be renewed by one of the following methods:

(1) For a lapse of less than 3 years, the HMIWI operator shall complete and pass a standard annual refresher course described in paragraph (f) of this section.

(2) For a lapse of 3 years or more, the HMIWI operator shall complete and pass a training course with the minimum criteria described in paragraph (c) of this section.

(h) The owner or operator of an affected facility shall maintain documentation at the facility that address the following:

(1) Summary of the applicable standards under this subpart;

(2) Description of basic combustion theory applicable to an HMIWI;

(3) Procedures for receiving, handling, and charging waste;

(4) HMIWI startup, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the HMIWI and associated air pollution control systems within the standards established under this subpart;

(7) Procedures for responding to periodic malfunction or conditions that may lead to malfunction;

(8) Procedures for monitoring HMIWI emissions;

(9) Reporting and recordkeeping procedures; and

(10) Procedures for handling ash.

(i) The owner or operator of an affected facility shall establish a program for reviewing the information listed in paragraph (h) of this section annually with each HMIWI operator (defined in § 60.51c).

(1) The initial review of the information listed in paragraph (h) of this section shall be conducted within 6 months after the effective date of this subpart or prior to assumption of responsibilities affecting HMIWI operation, whichever date is later.

(2) Subsequent reviews of the information listed in paragraph (h) of this section shall be conducted annually.

(j) The information listed in paragraph (h) of this section shall be kept in a readily accessible location for all HMIWI operators. This information, along with records of training shall be available for inspection by the EPA or its delegated enforcement agent upon request.

§ 60.54c Siting requirements.

(a) The owner or operator of an affected facility for which construction is commenced after September 15, 1997 shall prepare an analysis of the impacts of the affected facility. The analysis shall consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, non-air environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of facility impacts prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, as long as they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) The owner or operator of the affected facility shall complete and submit the siting requirements of this section as required under § 60.58c(a)(1)(iii).

§ 60.55c Waste management plan.

The owner or operator of an affected facility shall prepare a waste management plan. The waste management plan shall identify both the feasibility and the approach to separate certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste. A waste management plan may include, but is not limited to, elements such as segregation and recycling of paper, cardboard, plastics, glass, batteries, food waste, and metals (*e.g.*, aluminum cans, metals-containing devices); segregation of non-recyclable wastes (*e.g.*, polychlorinated biphenyl-containing waste, pharmaceutical waste, and mercury-containing waste, such as dental

waste); and purchasing recycled or recyclable products. A waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have. The American Hospital Association publication entitled ''An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities'' (incorporated by reference, *see* §60.17) shall be considered in the development of the waste management plan. The owner or operator of each commercial HMIWI company shall conduct training and education programs in waste segregation for each of the company's waste generator clients and ensure that each client prepares its own waste management plan that includes, but is not limited to, the provisions listed previously in this section.

[74 FR 51409, Oct. 6, 2009]

§60.56c Compliance and performance testing.

(a) The emissions limits apply at all times.

(b) The owner or operator of an affected facility as defined in §60.50c(a)(1) and (2), shall conduct an initial performance test as required under §60.8 to determine compliance with the emissions limits using the procedures and test methods listed in paragraphs (b)(1) through (b)(6) and (b)(9) through (b)(14) of this section. The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4), shall conduct an initial performance test as required under §60.8 to determine compliance with the emissions limits using the procedures and test methods listed in paragraphs (b)(1) through (b)(14). The use of the bypass stack during a performance test shall invalidate the performance test.

(1) All performance tests shall consist of a minimum of three test runs conducted under representative operating conditions.

(2) The minimum sample time shall be 1 hour per test run unless otherwise indicated.

(3) EPA Reference Method 1 of appendix A of this part shall be used to select the sampling location and number of traverse points.

(4) EPA Reference Method 3, 3A, or 3B of appendix A–2 of this part shall be used for gas composition analysis, including measurement of oxygen concentration. EPA Reference Method 3, 3A, or 3B of appendix A–2 of this part shall be used simultaneously with each of the other EPA reference methods. As an alternative to EPA Reference Method 3B, ASME PTC–19–10–1981–Part 10 may be used (incorporated by reference, *see* §60.17).

(5) The pollutant concentrations shall be adjusted to 7 percent oxygen using the following equation:

$$C_{adj}=C_{meas}\ (20.9-7)/(20.9-\%O_2)$$

where:

C_{adj}=pollutant concentration adjusted to 7 percent oxygen;

C_{meas}=pollutant concentration measured on a dry basis (20.9 − 7)=20.9 percent oxygen—7 percent oxygen (defined oxygen correction basis);

20.9=oxygen concentration in air, percent; and

$\%O_2$=oxygen concentration measured on a dry basis, percent.

(6) EPA Reference Method 5 of appendix A–3 or Method 26A or Method 29 of appendix A–8 of this part shall be used to measure the particulate matter emissions. As an alternative, PM CEMS may be used as specified in paragraph (c)(5) of this section.

(7) EPA Reference Method 7 or 7E of appendix A–4 of this part shall be used to measure NO_X emissions.

(8) EPA Reference Method 6 or 6C of appendix A–4 of this part shall be used to measure SO_2 emissions.

(9) EPA Reference Method 9 of appendix A–4 of this part shall be used to measure stack opacity. As an alternative, demonstration of compliance with the PM standards using bag leak detection systems as specified in §60.57c(h) or PM CEMS as specified in paragraph (c)(5) of this section is considered demonstrative of compliance with the opacity requirements.

(10) EPA Reference Method 10 or 10B of appendix A–4 of this part shall be used to measure the CO emissions. As specified in paragraph (c)(4) of this section, use of CO CEMS are required for affected facilities under § 60.50c(a)(3) and (4).

(11) EPA Reference Method 23 of appendix A–7 of this part shall be used to measure total dioxin/furan emissions. As an alternative, an owner or operator may elect to sample dioxins/furans by installing, calibrating, maintaining, and operating a continuous automated sampling system for monitoring dioxin/furan emissions as specified in paragraph (c)(6) of this section. For Method 23 of appendix A–7 sampling, the minimum sample time shall be 4 hours per test run. If the affected facility has selected the toxic equivalency standards for dioxins/furans, under § 60.52c, the following procedures shall be used to determine compliance:

(i) Measure the concentration of each dioxin/furan tetra-through octa-congener emitted using EPA Reference Method 23.

(ii) For each dioxin/furan congener measured in accordance with paragraph (b)(9)(i) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in table 2 of this subpart.

(iii) Sum the products calculated in accordance with paragraph (b)(9)(ii) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(12) EPA Reference Method 26 or 26A of appendix A–8 of this part shall be used to measure HCl emissions. As an alternative, HCl CEMS may be used as specified in paragraph (c)(5) of this section.

(13) EPA Reference Method 29 of appendix A–8 of this part shall be used to measure Pb, Cd, and Hg emissions. As an alternative, Hg emissions may be measured using ASTM D6784–02 (incorporated by reference, *see* § 60.17). As an alternative for Pb, Cd, and Hg, multimetals CEMS or Hg CEMS, may be used as specified in paragraph (c)(5) of this section. As an alternative, an owner or operator may elect to sample Hg by installing, calibrating, maintaining, and operating a continuous automated sampling system for monitoring Hg emissions as specified in paragraph (c)(7) of this section.

(14) The EPA Reference Method 22 of appendix A–7 of this part shall be used to determine compliance with the fugitive ash emissions limit under § 60.52c(c). The minimum observation time shall be a series of three 1-hour observations.

(c) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility shall:

(1) Determine compliance with the opacity limit by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section.

(2) Except as provided in paragraphs (c)(4) and (c)(5) of this section, determine compliance with the PM, CO, and HCl emissions limits by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section. If all three performance tests over a 3-year period indicate compliance with the emissions limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for the subsequent 2 years. At a minimum, a performance test for PM, CO, and HCl shall be conducted every third year (no more than 36 months following the previous performance test). If a performance test conducted every third year indicates compliance with the emissions limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for an additional 2 years. If any performance test indicates noncompliance with the respective emissions limit, a performance test for that pollutant shall be conducted annually until all annual performance tests over a 3-year period indicate compliance with the emissions limit. The use of the bypass stack during a performance test shall invalidate the performance test.

(3) For an affected facility as defined in § 60.50c(a)(1) and (2) and utilizing a

large HMIWI, and in §60.50c(a)(3) and (4), determine compliance with the visible emissions limits for fugitive emissions from flyash/bottom ash storage and handling by conducting a performance test using EPA Reference Method 22 of appendix A–7 on an annual basis (no more than 12 months following the previous performance test).

(4) For an affected facility as defined in §60.50c(a)(3) and (4), determine compliance with the CO emissions limit using a CO CEMS according to paragraphs (c)(4)(i) through (c)(4)(iii) of this section:

(i) Determine compliance with the CO emissions limit using a 24-hour block average, calculated as specified in section 12.4.1 of EPA Reference Method 19 of appendix A–7 of this part.

(ii) Operate the CO CEMS in accordance with the applicable procedures under appendices B and F of this part.

(iii) Use of a CO CEMS may be substituted for the CO annual performance test and minimum secondary chamber temperature to demonstrate compliance with the CO emissions limit.

(5) Facilities using CEMS to demonstrate compliance with any of the emissions limits under §60.52c shall:

(i) For an affected facility as defined in §60.50c(a)(1) and (2), determine compliance with the appropriate emissions limit(s) using a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours.

(ii) For an affected facility as defined in §60.50c(a)(3) and (4), determine compliance with the appropriate emissions limit(s) using a 24-hour block average, calculated as specified in section 12.4.1 of EPA Reference Method 19 of appendix A–7 of this part.

(iii) Operate all CEMS in accordance with the applicable procedures under appendices B and F of this part. For those CEMS for which performance specifications have not yet been promulgated (HCl, multi-metals), this option for an affected facility as defined in §60.50c(a)(3) and (4) takes effect on the date a final performance specification is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan.

(iv) For an affected facility as defined in §60.50c(a)(3) and (4), be allowed to substitute use of an HCl CEMS for the HCl annual performance test, minimum HCl sorbent flow rate, and minimum scrubber liquor pH to demonstrate compliance with the HCl emissions limit.

(v) For an affected facility as defined in §60.50c(a)(3) and (4), be allowed to substitute use of a PM CEMS for the PM annual performance test and minimum pressure drop across the wet scrubber, if applicable, to demonstrate compliance with the PM emissions limit.

(6) An affected facility as defined in §60.50c(a)(3) and (4) using a continuous automated sampling system to demonstrate compliance with the dioxin/furan emissions limits under §60.52c shall record the output of the system and analyze the sample according to EPA Reference Method 23 of appendix A–7 of this part. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to dioxin/furan from monitors is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan. The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) who elects to continuously sample dioxin/furan emissions instead of sampling and testing using EPA Reference Method 23 of appendix A–7 shall install, calibrate, maintain, and operate a continuous automated sampling system and shall comply with the requirements specified in §60.58b(p) and (q) of subpart Eb of this part.

(7) An affected facility as defined in §60.50c(a)(3) and (4) using a continuous automated sampling system to demonstrate compliance with the Hg emissions limits under §60.52c shall record the output of the system and analyze the sample at set intervals using any suitable determinative technique that can meet appropriate performance criteria. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to Hg from monitors is published in the FEDERAL REGISTER or the date of approval of a site-specific monitoring plan. The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) who elects to continuously sample Hg

emissions instead of sampling and testing using EPA Reference Method 29 of appendix A–8 of this part, or an approved alternative method for measuring Hg emissions, shall install, calibrate, maintain, and operate a continuous automated sampling system and shall comply with the requirements specified in § 60.58b(p) and (q) of subpart Eb of this part.

(d) Except as provided in paragraphs (c)(4) through (c)(7) of this section, the owner or operator of an affected facility equipped with a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and wet scrubber shall:

(1) Establish the appropriate maximum and minimum operating parameters, indicated in table 3 of this subpart for each control system, as site specific operating parameters during the initial performance test to determine compliance with the emission limits; and

(2) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, ensure that the affected facility does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in table 3 of this subpart and measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times. Operating parameter limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating parameter(s) shall constitute a violation of established operating parameter(s).

(e) Except as provided in paragraph (i) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter:

(1) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(2) Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(3) Operation of the affected facility above the maximum charge rate and below the minimum HCl sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(5) Use of the bypass stack shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emissions limits.

(6) Operation of the affected facility as defined in § 60.50c(a)(3) and (4) above the CO emissions limit as measured by the CO CEMS specified in paragraph (c)(4) of this section shall constitute a violation of the CO emissions limit.

(7) For an affected facility as defined in § 60.50c(a)(3) and (4), failure to initiate corrective action within 1 hour of a bag leak detection system alarm; or failure to operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period shall constitute a violation of the PM emissions limit. If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. If it takes longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action. If the bag leak detection system is used to demonstrate compliance with the opacity limit, this would also constitute a violation of the opacity emissions limit.

(8) Operation of the affected facility as defined in § 60.50c(a)(3) and (4) above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS

specified in paragraph (c)(5) of this section shall constitute a violation of the applicable emissions limit.

(9) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(6) of this section shall constitute a violation of the dioxin/furan emissions limit.

(10) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the Hg emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(7) of this section shall constitute a violation of the Hg emissions limit.

(f) Except as provided in paragraph (i) of this section, for affected facilities equipped with a wet scrubber:

(1) Operation of the affected facility above the maximum charge rate and below the minimum pressure drop across the wet scrubber or below the minimum horsepower or amperage to the system (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM emission limit.

(2) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(3) Operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum scrubber liquor flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(5) Operation of the affected facility above the maximum flue gas temperature and above the maximum charge rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(6) Use of the bypass stack shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emissions limits.

(7) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the CO emissions limit as measured by the CO CEMS specified in paragraph (c)(4) of this section shall constitute a violation of the CO emissions limit.

(8) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in paragraph (c)(5) of this section shall constitute a violation of the applicable emissions limit.

(9) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(6) of this section shall constitute a violation of the dioxin/furan emissions limit.

(10) Operation of the affected facility as defined in §60.50c(a)(3) and (4) above the Hg emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(7) of this section shall constitute a violation of the Hg emissions limit.

(g) Except as provided in paragraph (i) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter and a wet scrubber:

(1) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(2) Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(3) Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(5) Use of the bypass stack shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emissions limits.

(6) Operation of the affected facility as defined in § 60.50c(a)(3) and (4) above the CO emissions limit as measured by the CO CEMS specified in paragraph (c)(4) of this section shall constitute a violation of the CO emissions limit.

(7) For an affected facility as defined in § 60.50c(a)(3) and (4), failure to initiate corrective action within 1 hour of a bag leak detection system alarm; or failure to operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period shall constitute a violation of the PM emissions limit. If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. If it takes longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action. If the bag leak detection system is used to demonstrate compliance with the opacity limit, this would also constitute a violation of the opacity emissions limit.

(8) Operation of the affected facility as defined in § 60.50c(a)(3) and (4) above the PM, HCl, Pb, Cd, and/or Hg emissions limit as measured by the CEMS specified in paragraph (c)(5) of this section shall constitute a violation of the applicable emissions limit.

(9) Operation of the affected facility as defined in § 60.50c(a)(3) and (4) above the dioxin/furan emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(6) of this section shall constitute a violation of the dioxin/furan emissions limit.

(10) Operation of the affected facility as defined in § 60.50c(a)(3) and (4) above the Hg emissions limit as measured by the continuous automated sampling system specified in paragraph (c)(7) of this section shall constitute a violation of the Hg emissions limit.

(h) The owner or operator of an affected facility as defined in § 60.50c(a)(3) and (4) equipped with selective noncatalytic reduction technology shall:

(1) Establish the maximum charge rate, the minimum secondary chamber temperature, and the minimum reagent flow rate as site specific operating parameters during the initial performance test to determine compliance with the emissions limits;

(2) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, ensure that the affected facility does not operate above the maximum charge rate, or below the minimum secondary chamber temperature or the minimum reagent flow rate measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times. Operating parameter limits do not apply during performance tests.

(3) Except as provided in paragraph (i) of this section, operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum reagent flow rate simultaneously shall constitute a violation of the NO_X emissions limit.

(i) The owner or operator of an affected facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the affected facility is not in violation of the applicable emissions limit(s). Repeat performance tests conducted pursuant to this paragraph shall be conducted using the identical operating parameters that indicated a violation under paragraph (e), (f), (g), or (h) of this section.

(j) The owner or operator of an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, a dry scrubber followed by a fabric filter and a wet scrubber, or selective noncatalytic reduction technology to comply with the emissions limits under § 60.52c shall petition the

Administrator for other site-specific operating parameters to be established during the initial performance test and continuously monitored thereafter. The owner or operator shall not conduct the initial performance test until after the petition has been approved by the Administrator.

(k) The owner or operator of an affected facility may conduct a repeat performance test at any time to establish new values for the operating parameters. The Administrator may request a repeat performance test at any time.

[62 FR 48382, Sept. 15, 1997, as amended at 65 FR 61753, Oct. 17, 2000; 74 FR 51409, Oct. 6, 2009; 78 FR 28066, May 13, 2013]

§60.57c Monitoring requirements.

(a) Except as provided in §60.56c(c)(4) through (c)(7), the owner or operator of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in Table 3 to this subpart (unless CEMS are used as a substitute for certain parameters as specified) such that these devices (or methods) measure and record values for these operating parameters at the frequencies indicated in Table 3 of this subpart at all times.

(b) The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) that uses selective noncatalytic reduction technology shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the operating parameters listed in §60.56c(h) such that the devices (or methods) measure and record values for the operating parameters at all times. Operating parameter values shall be measured and recorded at the following minimum frequencies:

(1) Maximum charge rate shall be measured continuously and recorded once each hour;

(2) Minimum secondary chamber temperature shall be measured continuously and recorded once each minute; and

(3) Minimum reagent flow rate shall be measured hourly and recorded once each hour.

(c) The owner or operator of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.

(d) The owner or operator of an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, a dry scrubber followed by a fabric filter and a wet scrubber, or selective noncatalytic reduction technology to comply with the emissions limits under §60.52c shall install, calibrate (to manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters developed pursuant to §60.56c(j).

(e) The owner or operator of an affected facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the affected facility is combusting hospital waste and/or medical/infectious waste.

(f) The owner or operator of an affected facility as defined in §60.50c(a)(3) and (4) shall ensure that each HMIWI subject to the emissions limits in §60.52c undergoes an initial air pollution control device inspection that is at least as protective as the following:

(1) At a minimum, an inspection shall include the following:

(i) Inspect air pollution control device(s) for proper operation, if applicable;

(ii) Ensure proper calibration of thermocouples, sorbent feed systems, and any other monitoring equipment; and

(iii) Generally observe that the equipment is maintained in good operating condition.

(2) Within 10 operating days following an air pollution control device inspection, all necessary repairs shall be completed unless the owner or operator

obtains written approval from the Administrator establishing a date whereby all necessary repairs of the designated facility shall be completed.

(g) The owner or operator of an affected facility as defined in § 60.50c(a)(3) and (4) shall ensure that each HMIWI subject to the emissions limits under § 60.52c undergoes an air pollution control device inspection annually (no more than 12 months following the previous annual air pollution control device inspection), as outlined in paragraphs (f)(1) and (f)(2) of this section.

(h) For affected facilities as defined in § 60.50c(a)(3) and (4) that use an air pollution control device that includes a fabric filter and are not demonstrating compliance using PM CEMS, determine compliance with the PM emissions limit using a bag leak detection system and meet the requirements in paragraphs (h)(1) through (h)(12) of this section for each bag leak detection system.

(1) Each triboelectric bag leak detection system may be installed, calibrated, operated, and maintained according to the ''Fabric Filter Bag Leak Detection Guidance,'' (EPA–454/R–98–015, September 1997). This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality Planning and Standards; Sector Policies and Programs Division; Measurement Policy Group (D–243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emissions Measurement Center Continuous Emissions Monitoring. Other types of bag leak detection systems shall be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(2) The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(3) The bag leak detection system sensor shall provide an output of relative PM loadings.

(4) The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor.

(5) The bag leak detection system shall be equipped with an audible alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel.

(6) For positive pressure fabric filter systems, a bag leak detector shall be installed in each baghouse compartment or cell.

(7) For negative pressure or induced air fabric filters, the bag leak detector shall be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(9) The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time according to section 5.0 of the ''Fabric Filter Bag Leak Detection Guidance.''

(10) Following initial adjustment of the system, the sensitivity or range, averaging period, alarm set points, or alarm delay time may not be adjusted. In no case may the sensitpt. OOOOivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection that demonstrates that the fabric filter is in good operating condition. Each adjustment shall be recorded.

(11) Record the results of each inspection, calibration, and validation check.

(12) Initiate corrective action within 1 hour of a bag leak detection system alarm; operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period. If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. If it takes longer than 1 hour to initiate corrective action, the alarm time is counted as the

actual amount of time taken to initiate corrective action.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51412, Oct. 6, 2009]

§60.58c Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility shall submit notifications, as provided by §60.7. In addition, the owner or operator shall submit the following information:

(1) Prior to commencement of construction;

(i) A statement of intent to construct;

(ii) The anticipated date of commencement of construction; and

(iii) All documentation produced as a result of the siting requirements of §60.54c.

(2) Prior to initial startup;

(i) The type(s) of waste to be combusted;

(ii) The maximum design waste burning capacity;

(iii) The anticipated maximum charge rate; and

(iv) If applicable, the petition for site-specific operating parameters under §60.56c(j).

(b) The owner or operator of an affected facility shall maintain the following information (as applicable) for a period of at least 5 years:

(1) Calendar date of each record;

(2) Records of the following data:

(i) Concentrations of any pollutant listed in §60.52c or measurements of opacity as determined by the continuous emission monitoring system (if applicable);

(ii) Results of fugitive emissions (by EPA Reference Method 22) tests, if applicable;

(iii) HMIWI charge dates, times, and weights and hourly charge rates;

(iv) Fabric filter inlet temperatures during each minute of operation, as applicable;

(v) Amount and type of dioxin/furan sorbent used during each hour of operation, as applicable;

(vi) Amount and type of Hg sorbent used during each hour of operation, as applicable;

(vii) Amount and type of HCl sorbent used during each hour of operation, as applicable;

(viii) For affected facilities as defined in §60.50c(a)(3) and (4), amount and type of NO_X reagent used during each hour of operation, as applicable;

(ix) Secondary chamber temperatures recorded during each minute of operation;

(x) Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable;

(xi) Horsepower or amperage to the wet scrubber during each minute of operation, as applicable;

(xii) Pressure drop across the wet scrubber system during each minute of operation, as applicable,

(xiii) Temperature at the outlet from the wet scrubber during each minute of operation, as applicable;

(xiv) pH at the inlet to the wet scrubber during each minute of operation, as applicable,

(xv) Records indicating use of the bypass stack, including dates, times, and durations, and

(xvi) For affected facilities complying with §60.56c(j) and §60.57c(d), the owner or operator shall maintain all operating parameter data collected;

(xvii) For affected facilities as defined in §60.50c(a)(3) and (4), records of the annual air pollution control device inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator.

(xviii) For affected facilities as defined in §60.50c(a)(3) and (4), records of each bag leak detection system alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken, as applicable.

(xix) For affected facilities as defined in §60.50c(a)(3) and (4), concentrations of CO as determined by the continuous emissions monitoring system.

(3) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.

(4) Identification of calendar days, times and durations of malfunctions, a description of the malfunction and the corrective action taken.

(5) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.

(6) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emissions limits and/or to establish or re-establish operating parameters, as applicable, and a description, including sample calculations, of how the operating parameters were established or re-established, if applicable.

(7) All documentation produced as a result of the siting requirements of § 60.54c;

(8) Records showing the names of HMIWI operators who have completed review of the information in § 60.53c(h) as required by § 60.53c(i), including the date of the initial review and all subsequent annual reviews;

(9) Records showing the names of the HMIWI operators who have completed the operator training requirements, including documentation of training and the dates of the training;

(10) Records showing the names of the HMIWI operators who have met the criteria for qualification under § 60.53c and the dates of their qualification; and

(11) Records of calibration of any monitoring devices as required under § 60.57c(a) through (d).

(c) The owner or operator of an affected facility shall submit the information specified in paragraphs (c)(1) through (c)(4) of this section no later than 60 days following the initial performance test. All reports shall be signed by the facilities manager.

(1) The initial performance test data as recorded under § 60.56c(b)(1) through (b)(14), as applicable.

(2) The values for the site-specific operating parameters established pursuant to § 60.56c(d), (h), or (j), as applicable, and a description, including sample calculations, of how the operating parameters were established during the initial performance test.

(3) The waste management plan as specified in § 60.55c.

(4) For each affected facility as defined in § 60.50c(a)(3) and (4) that uses a bag leak detection system, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in § 60.57c(h).

(d) An annual report shall be submitted 1 year following the submissions of the information in paragraph (c) of this section and subsequent reports shall be submitted no more than 12 months following the previous report (once the unit is subject to permitting requirements under title V of the Clean Air Act, the owner or operator of an affected facility must submit these reports semiannually). The annual report shall include the information specified in paragraphs (d)(1) through (11) of this section. All reports shall be signed by the facilities manager.

(1) The values for the site-specific operating parameters established pursuant to § 60.56c(d), (h), or (j), as applicable.

(2) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported, pursuant to § 60.56c(d), (h), or (j), as applicable.

(3) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded pursuant to § 60.56c(d), (h), or (j) for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(4) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported.

(5) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(6) If a performance test was conducted during the reporting period, the results of that test.

(7) If no exceedances or malfunctions were reported under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported, a statement that no exceedances occurred during the reporting period.

(8) Any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.

(9) For affected facilities as defined in §60.50c(a)(3) and (4), records of the annual air pollution control device inspection, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator.

(10) For affected facilities as defined in §60.50c(a)(3) and (4), records of each bag leak detection system alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken, as applicable.

(11) For affected facilities as defined in §60.50c(a)(3) and (4), concentrations of CO as determined by the continuous emissions monitoring system.

(e) The owner or operator of an affected facility shall submit semiannual reports containing any information recorded under paragraphs (b)(3) through (b)(5) of this section no later than 60 days following the reporting period. The first semiannual reporting period ends 6 months following the submission of information in paragraph (c) of this section. Subsequent reports shall be submitted no later than 6 calendar months following the previous report. All reports shall be signed by the facilities manager.

(f) All records specified under paragraph (b) of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Administrator.

(g) For affected facilities, as defined in §60.50c(a)(3) and (4), that choose to submit an electronic copy of stack test reports to EPA's WebFIRE data base, as of December 31, 2011, the owner or operator of an affected facility shall enter the test data into EPA's data base using the Electronic Reporting Tool located at *http://www.epa.gov/ttn/chief/ert/ert_tool.html*.

[62 FR 48382, Sept. 15, 1997, as amended at 74 FR 51413, Oct. 6, 2009; 76 FR 18413, Apr. 4, 2011]

TABLE 1A TO SUBPART Ec OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT AFFECTED FACILITIES AS DEFINED IN §60.50c(a)(1) AND (2)

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Particulate matter.	Milligrams per dry standard cubic meter (grains per dry standard cubic foot).	69 (0.03)	34 (0.015) ..	34 (0.015)	3-run average (1-hour minimum sample time per run).	EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method M 26A or 29 of appendix A–8 of part 60.
Carbon monoxide.	Parts per million by volume.	40	40	40	3-run average (1-hour minimum sample time per run).	EPA Reference Method 10 or 10B of appendix A–4 of part 60.

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Dioxins/furans.	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet).	125 (55) or 2.3 (1.0).	25 (11) or 0.6 (0.26).	25 (11) or 0.6 (0.26).	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	Parts per million by volume or percent reduction.	15 or 99% ..	15 or 99% ..	15 or 99%	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide	Parts per million by volume.	55	55	55	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides.	Parts per million by volume.	250	250	250	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	1.2 (0.52) or 70%.	0.07 (0.03) or 98%.	0.07 (0.03) or 98%.	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.16 (0.07) or 65%.	0.04 (0.02) or 90%.	0.04 (0.02) or 90%.	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.55 (0.24) or 85%.	0.55 (0.24) or 85%.	0.55 (0.24) or 85%.	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[74 FR 51414, Oct. 6, 2009, as amended at 76 FR 18414, Apr. 4, 2011]

TABLE 1B TO SUBPART Ec OF PART 60—EMISSIONS LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI AT AFFECTED FACILITIES AS DEFINED IN § 60.50c(a)(3) AND (4)

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Particulate matter.	Milligrams per dry standard cubic meter (grains per dry standard cubic foot).	66 (0.029) ..	22 (0.0095)	18 (0.0080) ...	3-run average (1-hour minimum sample time per run).	EPA Reference Method 5 of appendix A–3 of part 60, or EPA Reference Method 26A or 29 of appendix A–8 of part 60.
Carbon monoxide.	Parts per million by volume.	20	1.8	11	3-run average (1-hour minimum sample time per run).	EPA Reference Method 10 or 10B of appendix A–4 of part 60.

Pollutant	Units (7 percent oxygen, dry basis)	Emissions limits			Averaging time [1]	Method for demonstrating compliance [2]
		HMIWI size				
		Small	Medium	Large		
Dioxins/furans.	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet).	16 (7.0) or 0.013 (0.0057).	0.47 (0.21) or 0.014 (0.0061).	9.3 (4.1) or 0.035 (0.015).	3-run average (4-hour minimum sample time per run).	EPA Reference Method 23 of appendix A–7 of part 60.
Hydrogen chloride.	Parts per million by volume.	15	7.7	5.1	3-run average (1-hour minimum sample time per run).	EPA Reference Method 26 or 26A of appendix A–8 of part 60.
Sulfur dioxide	Parts per million by volume.	1.4	1.4	8.1	3-run average (1-hour minimum sample time per run).	EPA Reference Method 6 or 6C of appendix A–4 of part 60.
Nitrogen oxides.	Parts per million by volume.	67	67	140	3-run average (1-hour minimum sample time per run).	EPA Reference Method 7 or 7E of appendix A–4 of part 60.
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet).	0.31 (0.14)	0.018 (0.0079).	0.00069 (0.00030).	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet).	0.017 (0.0074).	0.0098 (0.0043).	0.00013 (0.000057).	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet).	0.014 (0.0061).	0.0035 (0.0015).	0.0013 (0.00057).	3-run average (1-hour minimum sample time per run).	EPA Reference Method 29 of appendix A–8 of part 60.

[1] Except as allowed under § 60.56c(c) for HMIWI equipped with CEMS.
[2] Does not include CEMS and approved alternative non-EPA test methods allowed under § 60.56c(b).

[74 FR 51414, Oct. 6, 2009, as amended at 76 FR 18414, Apr. 4, 2011]

TABLE 2 OF SUBPART Ec OF PART 60—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
Octachlorinated dibenzofuran	0.001

TABLE 3 TO SUBPART EC OF PART 60—OPERATING PARAMETERS TO BE MONITORED AND MINIMUM MEASUREMENT AND RECORDING FREQUENCIES

Operating parameters to be monitored	Minimum frequency		Control system		
	Data measurement	Data recording	Dry scrubber followed by fabric filter	Wet scrubber	Dry scrubber followed by fabric filter and wet scrubber
Maximum operating parameters:					
Maximum charge rate	Continuous	1×hour	✔	✔	✔
Maximum fabric filter inlet temperature.	Continuous	1×minute	✔		✔
Maximum flue gas temperature.	Continuous	1×minute	✔	✔	
Minimum operating parameters:					
Minimum secondary chamber temperature.	Continuous	1×minute	✔	✔	✔
Minimum dioxin/furan sorbent flow rate.	Hourly	1×hour	✔		✔
Minimum HCl sorbent flow rate.	Hourly	1×hour	✔		✔
Minimum mercury (Hg) sorbent flow rate.	Hourly	1×hour	✔		✔
Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to wet scrubber.	Continuous	1×minute		✔	✔
Minimum scrubber liquor flow rate.	Continuous	1×minute		✔	✔
Minimum scrubber liquor pH.	Continuous	1×minute		✔	✔

Subpart F—Standards of Performance for Portland Cement Plants

§ 60.60 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in portland cement plants: Kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

§ 60.61 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Portland cement plant* means any facility manufacturing portland cement by either the wet or dry process.

(b) *Bypass* means any system that prevents all or a portion of the kiln or clinker cooler exhaust gases from entering the main control device and ducts the gases through a separate control device. This does not include emergency systems designed to duct exhaust gases directly to the atmosphere in the event of a malfunction of any control device controlling kiln or clinker cooler emissions.

(c) *Bypass stack* means the stack that vents exhaust gases to the atmosphere from the bypass control device.

(d) *Monovent* means an exhaust configuration of a building or emission control device (e.g., positive-pressure fabric filter) that extends the length of the structure and has a width very small in relation to its length (i.e., length to width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features.

(e) *Excess emissions* means, with respect to this subpart, results of any required measurements outside the applicable range (e.g., emissions limitations, parametric operating limits) that is permitted by this subpart. The values of measurements will be in the same units and averaging time as the values specified in this subpart for the limitations.

(f) *Operating day* means a 24-hour period beginning at 12:00 midnight during which the kiln operates at any time. For calculating rolling 30-day average emissions, an *operating day* does not include the hours of operation during startup or shutdown.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20793, June 13, 1974; 53 FR 50363, Dec. 14, 1988; 78 FR 10032, Feb. 12, 2013]

§ 60.62 Standards.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, you may not discharge into the atmosphere from any kiln any gases which:

(1) Contain particulate matter (PM) in excess of:

(i) [Reserved]

(ii) 0.02 pound per ton of clinker if construction or reconstruction of the kiln commenced after June 16, 2008.

(iii) Kilns that have undergone a modification may not discharge into the atmosphere any gases which contain PM in excess of 0.07 pound per ton of clinker.

(2) [Reserved]

(3) Exceed 1.50 pounds of nitrogen oxide (NO_X) per ton of clinker on a 30-operating day rolling average if construction, reconstruction, or modification of the kiln commences after June 16, 2008, except this limit does not apply to any alkali bypass installed on the kiln. An operating day includes all valid data obtained in any daily 24-hour period during which the kiln operates and excludes any measurements made during the daily 24-hour period when the kiln was not operating.

(4) Exceed 0.4 pounds of sulfur dioxide (SO_2) per ton of clinker on a 30-operating day rolling average if construction, reconstruction, or modification commences after June 16, 2008, unless you are demonstrating a 90 percent SO_2 emissions reduction measured across the SO_2 control device. An operating day includes all valid data obtained in any daily 24-hour period during which the kiln operates, and excludes any measurements made during the daily 24-hour period when the kiln was not operating.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, you may not discharge into the atmosphere from any clinker cooler any gases which:

(1) Contain PM in excess of:

(i) 0.02 pound per ton of clinker if construction or reconstruction of the clinker cooler commences after June 16, 2008.

(ii) 0.07 pound per ton of clinker if the clinker cooler has undergone a modification.

(2) If the kiln and clinker cooler exhaust are combined for energy efficiency purposes and sent to a single control device, the appropriate kiln PM limit may be adjusted using the procedures in § 63.1343(b) of this chapter.

(3) If the kiln has a separated alkali bypass stack and/or an inline coal mill with a separate stack, you must combine the PM emissions from the bypass stack and/or the inline coal mill stack with the PM emissions from the main kiln exhaust to determine total PM emissions.

(c) On and after the date on which the performance test required to be conducted by § 60.8 is completed, you may not discharge into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity, or greater.

(d) If you have an affected source subject to this subpart with a different emissions limit or requirement for the same pollutant under another regulation in title 40 of this chapter, you must comply with the most stringent emissions limit or requirement and are not subject to the less stringent requirement.

[75 FR 55034, Sept. 9, 2010, as amended at 78 FR 10032, Feb. 12, 2013]

§ 60.63 Monitoring of operations.

(a) [Reserved]

(b) *Clinker production monitoring requirements.* For any kiln subject to an emissions limitation on PM, NO_X, or SO_2 emissions (lb/ton of clinker), you must:

(1) Determine hourly clinker production by one of two methods:

(i) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates of the amount of clinker produced in tons of mass per hour. The system of measuring hourly clinker production must be maintained within ±5 percent accuracy or

(ii) Install, calibrate, maintain, and operate a permanent weigh scale system to measure and record weight rates of the amount of feed to the kiln in tons of mass per hour. The system of measuring feed must be maintained within ±5 percent accuracy. Calculate your hourly clinker production rate using a kiln specific feed-to-clinker ratio based on reconciled clinker production rates determined for accounting purposes and recorded feed rates. This ratio should be updated monthly. Note that if this ratio changes at clinker reconciliation, you must use the new ratio going forward, but you do not have to retroactively change clinker production rates previously estimated.

(iii) For each kiln operating hour for which you do not have data on clinker production or the amount of feed to the kiln, use the value from the most recent previous hour for which valid data are available.

(2) Determine, record, and maintain a record of the accuracy of the system of measuring hourly clinker production rates or feed rates before initial use (for new sources) or by the effective compliance date of this rule (for existing sources). During each quarter of source operation, you must determine, record, and maintain a record of the ongoing accuracy of the system of measuring hourly clinker production rates or feed rates.

(3) If you measure clinker production directly, record the daily clinker production rates; if you measure the kiln feed rates and calculate clinker production, record the daily kiln feed and clinker production rates.

(c) *PM Emissions Monitoring Requirements.* (1) For each kiln or clinker cooler subject to a PM emissions limit in § 60.62, you must demonstrate compliance through an initial performance test. You will conduct your performance test using Method 5 or Method 5I at appendix A–3 to part 60 of this chapter. You must also monitor continuous performance through use of a PM continuous parametric monitoring system (PM CPMS).

(2) For your PM CPMS, you will establish a site-specific operating limit. If your PM performance test demonstrates your PM emission levels to be below 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test, the milliamp equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your operating limit equivalent to 75 percent of the standard. If your PM compliance test demonstrates your PM emission levels to be at or above 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test demonstrating compliance with the PM limit to establish your operating limit. You will use the PM CPMS to demonstrate continuous compliance with your operating limit. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(i) Your PM CPMS must provide a 4–20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps.

(ii) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit.

(iii) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all your PM CPMS output values for three corresponding 2-hour Method 5I test runs).

(3) Determine your operating limit as specified in paragraphs (c)(4)(i) through (c)(5) of this section. If your PM performance test demonstrates your PM emission levels to be below 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test, the milliamp equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your operating limit. If your PM compliance test demonstrates your PM emission levels to be at or above 75 percent of your emission limit you will use the average PM CPMS value recorded during the PM compliance test to establish your operating limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test at least annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(4) If the average of your three Method 5 or 5I compliance test runs are below 75 percent of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or 5I compliance test with the procedures in (c)(4)(i)(A) through (D) of this section.

(i) Determine your PM CPMS instrument zero output with one of the following procedures.

(A) Zero point data for in-situ instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(B) Zero point data for extractive instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(C) The zero point can also can be obtained by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (e.g., when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(D) If none of the steps in paragraphs (c)(4)(i)(A) through (C) of this section are possible, you must use a zero output value provided by the manufacturer.

(ii) Determine your PM CPMS instrument average in milliamps, and theaverage of your corresponding three PM compliance test runs, using equation 1.

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} X_1 \ , \bar{y} = \frac{1}{n}\sum_{i=1}^{n} Y_1 \qquad \text{(Eq. 1)}$$

Where:

X1 = The PM CPMS data points for the three runs constituting the performance test,

Y1 = The PM concentration value for the three runs constituting the performance test, and

n = The number of data points.

(iii) With your PM CPMS instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM concentration from your three PM performance test runs, determine a relationship of lb/ton-clinker per milliamp with equation 2.

$$R = \frac{Y_1}{(X_1 - z)} \qquad \text{(Eq. 2)}$$

Where:

R = The relative lb/ton clinker per milliamp for your PM CPMS.

Y1 = The three run average PM lb/ton clinker.

X1 = The three run average milliamp output from you PM CPMS.

z = the milliamp equivalent of your instrument zero determined from (c)(4)(i) of this section.

(iv) Determine your source specific 30-day rolling average operating limit using the lb/ton-clinker per milliamp value from Equation 2 above in Equation 3, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit.

$$O_l = z + (0.75(L)) / R \qquad \text{(Eq. 3)}$$

Where:

O_l = The operating limit for your PM CPMS on a 30-day rolling average, in milliamps.

L = Your source emission limit expressed in lb/ton clinker.

z = Your instrument zero in milliamps, determined from (1)(i).

R = The relative lb/ton-clinker per milliamp for your PM CPMS, from Equation 2.

(5) If the average of your three PM compliance test runs is at or above 75 percent of your PM emission limit you must determine your operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using Equation 4.

$$O_h = \frac{1}{n}\sum_{i=1}^{n} X_1 \qquad \text{(Eq. 4)}$$

Where:

X1 = The PM CPMS data points for all runs i.

n = The number of data points.

O_h = Your site specific operating limit, in milliamps.

(6) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating, and use all the PM CPMS data for calculations when the source is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (milliamps) on a 30 operating day rolling average basis, updated at the end of each new kiln operating day. Use Equation 5 to determine the 30 kiln operating day average.

$$30\text{kiln operating day average} = \frac{\sum_{i=1}^{n} Hpv_i}{n} \qquad \text{(Eq. 5)}$$

Where:

Hpvi = The hourly parameter value for hour i.

n = The number of valid hourly parameter values collected over 30 kiln operating days.

(7) Use EPA Method 5 or Method 5I of appendix A to part 60 of this chapter to determine PM emissions. For each performance test, conduct at least three separate runs under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur. Conduct each test run to collect a minimum sample volume of 2 dscm for determining compliance with a new source limit and 1 dscm for determining compliance with an existing source limit. Calculate the average of the results from three consecutive runs to determine compliance. You need not determine the particulate matter collected in the impingers (''back half'') of the Method 5 or Method 5I particulate sampling train to demonstrate compliance with the PM standards of this subpart. This shall not preclude the permitting authority from requiring a determination of the ''back half'' for other purposes.

(8) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.

(d) You must install, operate, calibrate, and maintain a CEMS continuously monitoring and recording the concentration by volume of NO_X emissions into the atmosphere for any kiln subject to the NO_X emissions limit in §60.62(a)(3). If the kiln has an alkali bypass, NO_X emissions from the alkali bypass do not need to be monitored, and NO_X emission monitoring of the kiln exhaust may be done upstream of any commingled alkali bypass gases.

(e) You must install, operate, calibrate, and maintain a CEMS for continuously monitoring and recording the concentration by volume of SO_2 emissions into the atmosphere for any kiln subject to the SO_2 emissions limit in §60.62(a)(4). If you are complying with the alternative 90 percent SO_2 emissions reduction emissions limit, you must also continuously monitor and record the concentration by volume of SO_2 present at the wet scrubber inlet.

(f) The NO_X and SO_2 CEMS required under paragraphs (d) and (e) of this section must be installed, operated and maintained according to Performance Specification 2 of appendix B of this part and the requirements in paragraphs (f)(1) through (5) of this section.

(1) The span value of each NO_X CEMS monitor must be set at 125 percent of the maximum estimated hourly potential NO_X emission concentration that translates to the applicable emissions limit at full clinker production capacity.

(2) You must conduct performance evaluations of each NO_X CEMS monitor according to the requirements in §60.13(c) and Performance Specification 2 of appendix B to this part. You must use Methods 7, 7A, 7C, 7D, or 7E of appendix A–4 to this part for conducting the relative accuracy evaluations. The method ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to Method 7 or 7C of appendix A–4 to this part.

(3) The span value for the SO_2 CEMS monitor is the SO_2 emission concentration that corresponds to 125 percent of the applicable emissions limit at full clinker production capacity and the expected maximum fuel sulfur content.

(4) You must conduct performance evaluations of each SO_2 CEMS monitor according to the requirements in §60.13(c) and Performance Specification 2 of appendix B to this part. You must use Methods 6, 6A, or 6C of appendix A–4 to this part for conducting the relative accuracy evaluations. The method ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to Method 6 or 6A of appendix A–4 to this part.

(5) You must comply with the quality assurance requirements in Procedure 1 of appendix F to this part for each NO_X and SO_2 CEMS, including quarterly accuracy determinations for monitors, and daily calibration drift tests.

(g) For each CPMS or CEMS required under paragraphs (c) through (e) of this section:

(1) You must operate the monitoring system and collect data at all required intervals at all times the affected source is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments).

(2) You may not use data recorded during the monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. An owner or operator must use all the data collected during all other periods in reporting emissions or operating levels.

(3) You must meet the requirements of § 60.13(h) when determining the 1-hour averages of emissions data.

(h) You must install, operate, calibrate, and maintain instruments for continuously measuring and recording the stack gas flow rate to allow determination of the pollutant mass emissions rate to the atmosphere for each kiln subject to the PM emissions limits in § 60.62(a)(1)(ii) and (iii) and (b)(1)(i) and (ii), the NO_X emissions limit in § 60.62(a)(3), or the SO_2 emissions limit in § 60.62(a)(4) according to the requirements in paragraphs (h)(1) through (10), where appropriate, of this section.

(1) The owner or operator must install each sensor of the flow rate monitoring system in a location that provides representative measurement of the exhaust gas flow rate at the sampling location of the NO_X and/or SO_2 CEMS, taking into account the manufacturer's recommendations. The flow rate sensor is that portion of the system that senses the volumetric flow rate and generates an output proportional to that flow rate.

(2) The flow rate monitoring system must be designed to measure the exhaust gas flow rate over a range that extends from a value of at least 20 percent less than the lowest expected exhaust flow rate to a value of at least 20 percent greater than the highest expected exhaust gas flow rate.

(3) The flow rate monitoring system must have a minimum accuracy of 5 percent of the flow rate.

(4) The flow rate monitoring system must be equipped with a data acquisition and recording system that is capable of recording values over the entire range specified in paragraph (h)(2) of this section.

(5) The signal conditioner, wiring, power supply, and data acquisition and recording system for the flow rate monitoring system must be compatible with the output signal of the flow rate sensors used in the monitoring system.

(6) The flow rate monitoring system must be designed to measure a minimum of one cycle of operational flow for each successive 15-minute period.

(7) The flow rate sensor must be able to determine the daily zero and upscale calibration drift (CD) (see sections 3.1 and 8.3 of Performance Specification 2 in appendix B to this part for a discussion of CD).

(i) Conduct the CD tests at two reference signal levels, zero (e.g., 0 to 20 percent of span) and upscale (e.g., 50 to 70 percent of span).

(ii) The absolute value of the difference between the flow monitor response and the reference signal must be equal to or less than 3 percent of the flow monitor span.

(8) You must perform an initial relative accuracy test of the flow rate monitoring system according to section 8.2 of Performance Specification 6 of appendix B to this part, with the exceptions noted in paragraphs (h)(8)(i) and (ii) of this section.

(i) The relative accuracy test is to evaluate the flow rate monitoring system alone rather than a continuous emission rate monitoring system.

(ii) The relative accuracy of the flow rate monitoring system shall be no greater than 10 percent of the mean value of the reference method data.

(9) You must verify the accuracy of the flow rate monitoring system at least once per year by repeating the relative accuracy test specified in paragraph (h)(8) of this section.

(10) You must operate the flow rate monitoring system and record data during all periods of operation of the affected facility including periods of startup, shutdown, and malfunction, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments.

(i) *Development and Submittal (Upon Request) of Monitoring Plans*. To demonstrate compliance with any applicable emissions limit through performance stack testing or other emissions monitoring (including PM CPMS), you must develop a site-specific monitoring plan according to the requirements in paragraphs (i)(1) through (4) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 60.13(3)(i). If you use a bag leak detector system (BLDS), you must also meet the requirements specified in paragraph § 63.1350(m)(10) of this chapter.

(1) For each continuous monitoring system (CMS) required in this section, you must develop, and submit to the permitting authority for approval upon request, a site-specific monitoring plan that addresses paragraphs (i)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan, if requested, at least 30 days before the initial performance evaluation of your CMS.

(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(2) In your site-specific monitoring plan, you must also address paragraphs (i)(2)(i) through (iii) of this section.

(i) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1), (c)(3), and (c)(4)(ii);

(ii) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d); and

(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c), (e)(1), and (e)(2)(i).

(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.

(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

[75 FR 55035, Sept. 9, 2010, as amended at 78 FR 10032, Feb. 12, 2013]

§ 60.64 Test methods and procedures.

(a) In conducting the performance tests and relative accuracy tests required in § 60.8, you must use reference methods and procedures and the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b)(1)You must demonstrate compliance with the PM standards in § 60.62 using EPA method 5 or method 5I.

(2) Use Method 9 and the procedures in § 60.11 to determine opacity.

(3) Any sources other than kilns (including associated alkali bypass and clinker cooler) that are subject to the 10 percent opacity limit must follow the appropriate monitoring procedures in § 63.1350(f), (m)(1)through (4), (10) and (11), (o), and (p) of this chapter.

(c) Calculate and record the rolling 30 kiln operating day average emission rate daily of NO_X and SO_2 according to

the procedures in paragraphs (c)(1) and (2) of this section.

(1) Calculate the rolling 30 kiln operating day average emissions according to equation 6:

$$E_{30D} = k \frac{\sum_{i=1}^{n} C_i Q_i}{P} \qquad \text{(Eq. 6)}$$

Where:

E_{30D} = 30 kiln operating day average emission rate of NO_X or SO_2, lb/ton of clinker.

C_i = Concentration of NO_X or SO_2 for hour i, ppm.

Q_i = Volumetric flow rate of effluent gas for hour i, where

C_i and Q_i are on the same basis (either wet or dry), scf/hr.

P = 30 days of clinker production during the same time period as the NO_X or SO_2 emissions measured, tons.

k = Conversion factor, 1.194×10^{M7} for NO_X and 1.660×10^{M7} for SO_2, lb/scf/ppm.

n = Number of kiln operating hours over 30 kiln operating days.

(2) For each kiln operating hour for which you do not have at least one valid 15-minute CEMS data value, use the average emissions rate (lb/hr) from the most recent previous hour for which valid data are available.

(d)(1) Within 60 days after the date of completing each performance test (see § 60.8) as required by this subpart you must submit the results of the performance tests conducted to demonstrate compliance under this subpart to the EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) (*http://www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of the EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk, flash drive or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the CBI, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, you must submit the results of the performance test to the Administrator at the appropriate address listed in § 63.13.

(2) Within 60 days after the date of completing each CEMS performance evaluation test as defined in § 63.2, you must submit relative accuracy test audit (RATA) data to the EPA's CDX by using CEDRI in accordance with paragraph (d)(1) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, you must submit the results of the performance evaluation to the Administrator at the appropriate address listed in § 63.13.

(3) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument

(e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.

(4) All reports required by this subpart not subject to the requirements in paragraphs (d)(1) and (2) of this section must be sent to the Administrator at the appropriate address listed in § 63.13. The Administrator or the delegated authority may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraph (d)(1) and (2) of this section in paper format.

[78 FR 10035, Feb. 12, 2013]

§ 60.65 Recordkeeping and reporting requirements.

(a) Each owner or operator required to install a CPMS or CEMS under sections § 60.63(c) through (e) shall submit reports of excess emissions. The content of these reports must comply with the requirements in § 60.7(c). Notwithstanding the provisions of § 60.7(c), such reports shall be submitted semiannually.

(b) Each owner or operator of facilities subject to the provisions of § 60.63(c) through (e) shall submit semiannual reports of the malfunction information required to be recorded by § 60.7(b). These reports shall include the frequency, duration, and cause of any incident resulting in deenergization of any device controlling kiln emissions or in the venting of emissions directly to the atmosphere.

(c) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, 42 U.S.C. 7411, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

[78 FR 10035, Feb. 12, 2013]

§ 60.66 Delegation of authority.

(a) This subpart can be implemented and enforced by the U.S. EPA or a delegated authority such as a State, local, or Tribal agency. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to a State, local, or Tribal agency within your State.

(b) In delegating implementation and enforcement authority to a State, local, or Tribal agency, the approval authorities contained paragraphs (b)(1) through (4) of this section are retained by the Administrator of the U.S EPA and are not transferred to the State, local, or Tribal agency.

(1) Approval of an alternative to any non-opacity emissions standard.

(2) Approval of a major change to test methods under § 60.8(b). A ''major change to test method'' is defined in 40 CFR 63.90.

(3) Approval of a major change to monitoring under § 60.13(i). A ''major change to monitoring'' is defined in 40 CFR 63.90.

(4) Approval of a major change to recordkeeping/reporting under § 60.7(b) through (f). A ''major change to recordkeeping/reporting'' is defined in 40 CFR 63.90.

[75 FR 55037, Sept. 9, 2010]

Subpart G—Standards of Performance for Nitric Acid Plants

§ 60.70 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each nitric acid production unit, which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, and on or before October 14, 2011 is subject to the requirements of this subpart. Any facility that commences construction or modification after October 14, 2011 is subject to subpart Ga of this part.

[42 FR 37936, July 25, 1977, as amended at 77 FR 48445, Aug. 14, 2012]

§ 60.71 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Nitric acid production unit* means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(b) *Weak nitric acid* means acid which is 30 to 70 percent in strength.

§ 60.72 Standard for nitrogen oxides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain nitrogen oxides, expressed as NO_2, in excess of 1.5 kg per metric ton of acid produced (3.0 lb per ton), the production being expressed as 100 percent nitric acid.

(2) Exhibit 10 percent opacity, or greater.

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975]

§ 60.73 Emission monitoring.

(a) The source owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides (NO_X). The pollutant gas mixtures under Performance Specification 2 and for calibration checks under § 60.13(d) of this part shall be nitrogen dioxide (NO_2). The span value shall be 500 ppm of NO_2. Method 7 shall be used for the performance evaluations under § 60.13(c). Acceptable alternative methods to Method 7 are given in § 60.74(c).

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be established by measuring emissions with the continuous monitoring system concurrent with measuring emissions with the applicable reference method tests. Using only that portion of the continuous monitoring emission data that represents emission measurements concurrent with the reference method test periods, the conversion factor shall be determined by dividing the reference method test data averages by the monitoring data averages to obtain a ratio expressed in units of the applicable standard to units of the monitoring data, i.e., kg/metric ton per ppm (lb/ton per ppm). The conversion factor shall be reestablished during any performance test under § 60.8 or any continuous monitoring system performance evaluation under § 60.13(c).

(c) The owner or operator shall record the daily production rate and hours of operation.

(d) [Reserved]

(e) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as any 3-hour period during which the average nitrogen oxides emissions (arithmetic average of three contiguous 1-hour periods) as measured by a continuous monitoring system exceed the standard under § 60.72(a).

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975; 50 FR 15894, Apr. 22, 1985; 54 FR 6666, Feb. 14, 1989]

§ 60.74 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the NO_X standard in § 60.72 as follows:

(1) The emission rate (E) of NO_X shall be computed for each run using the following equation:

$$E=(C_s\ Q_{sd})/(P\ K)$$

where:

E=emission rate of NO_X as NO_2, kg/metric ton (lb/ton) of 100 percent nitric acid.

C_s=concentration of NO_X as NO_2, g/dscm (lb/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=acid production rate, metric ton/hr (ton/hr) or 100 percent nitric acid.

K=conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 7 shall be used to determine the NO_X concentration of each grab sample. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the stack or duct or at a point no closer to the walls than 1 m (3.28 ft). Four grab samples shall be taken at approximately 15-minute intervals. The arithmetic mean of the four sample concentrations shall constitute the run value (C_s).

(3) Method 2 shall be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas. The measurement site shall be the same as for the NO_X sample. A velocity traverse shall be made once per run within the hour that the NO_X samples are taken.

(4) The methods of §60.73(c) shall be used to determine the production rate (P) of 100 percent nitric acid for each run. Material balance over the production system shall be used to confirm the production rate.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 7, Method 7A, 7B, 7C, or 7D may be used. If Method 7C or 7D is used, the sampling time shall be at least 1 hour.

(d) The owner or operator shall use the procedure in §60.73(b) to determine the conversion factor for converting the monitoring data to the units of the standard.

[54 FR 6666, Feb. 14, 1989]

Subpart Ga—Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011

SOURCE: 77 FR 48445, Aug. 14, 2012, unless otherwise noted.

§60.70a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each nitric acid production unit, which is the affected facility.

(b) This subpart applies to any nitric acid production unit that commences construction or modification after October 14, 2011.

§60.71a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Monitoring system malfunction means a sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to implement monitoring system repairs in response to monitoring system malfunctions or out-of-control periods, and to return the monitoring system to operation as expeditiously as practicable.

Nitric acid production unit means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

Operating day means a 24-hour period beginning at 12:00 a.m. during which the nitric acid production unit operated at any time during this period.

Weak nitric acid means acid which is 30 to 70 percent in strength.

§60.72a Standards.

Nitrogen oxides. On and after the date on which the performance test required to be conducted by §60.73a(e) is completed, you may not discharge into the atmosphere from any affected facility any gases which contain NO_X, expressed as NO_2, in excess of 0.50 pounds (lb) per ton of nitric acid produced, as a 30-day emission rate calculated based on 30 consecutive operating days, the production being expressed as 100 percent nitric acid. The emission standard applies at all times.

§ 60.73a Emissions testing and monitoring.

(a) *General emissions monitoring requirements.* You must install and operate a NO_X concentration (ppmv) continuous emissions monitoring system (CEMS). You must also install and operate a stack gas flow rate monitoring system. With measurements of stack gas NO_X concentration and stack gas flow rate, you will determine hourly NO_X emissions rate (e.g., lb/hr) and with measured data of the hourly nitric acid production (tons), calculate emissions in units of the applicable emissions limit (lb/ton of 100 percent acid produced). You must operate the monitoring system and report emissions during all operating periods including unit startup and shutdown, and malfunction.

(b) *Nitrogen oxides concentration continuous emissions monitoring system.* (1) You must install, calibrate, maintain, and operate a CEMS for measuring and recording the concentration of NO_X emissions in accordance with the provisions of § 60.13 and Performance Specification 2 of Appendix B and Procedure 1 of Appendix F of this part. You must use cylinder gas audits to fulfill the quarterly auditing requirement at section 5.1 of Procedure 1 of Appendix F of this part for the NO_X concentration CEMS.

(2) For the NO_X concentration CEMS, use a span value, as defined in Performance Specification 2, section 3.11, of Appendix B of this part, of 500 ppmv (as NO_2). If you emit NO_X at concentrations higher than 600 ppmv (e.g., during startup or shutdown periods), you must apply a second CEMS or dual range CEMS and a second span value equal to 125 percent of the maximum estimated NO_X emission concentration to apply to the second CEMS or to the higher of the dual analyzer ranges during such periods.

(3) For conducting the relative accuracy test audits, per Performance Specification 2, section 8.4, of Appendix B of this part and Procedure 1, section 5.1.1, of Appendix F of this part, use either EPA Reference Method 7, 7A, 7C, 7D, or 7E of Appendix A–4 of this part; EPA Reference Method 320 of Appendix A of part 63 of this chapter; or ASTM D6348–03 (incorporated by reference, see § 60.17). To verify the operation of the second CEMS or the higher range of a dual analyzer CEMS described in paragraph (b)(2) of this section, you need not conduct a relative accuracy test audit but only the calibration drift test initially (found in Performance Specification 2, section 8.3.1, of Appendix B of this part) and the cylinder gas audit thereafter (found in Procedure 1, section 5.1.2, of Appendix F of this part).

(4) If you use EPA Reference Method 7E of Appendix A–4 of this part, you must mitigate loss of NO_2 in water according to the requirements in paragraphs (b)(4)(i), (ii), or (iii) of this section and verify performance by conducting the system bias checks required in EPA Reference Method 7E, section 8, of Appendix A–4 of this part according to (b)(4)(iv) of this section, or follow the dynamic spike procedure according to paragraph (b)(4)(v) of this section.

(i) For a wet-basis measurement system, you must measure and report temperature of sample line and components (up to analyzer inlet) to demonstrate that the temperatures remain above the sample gas dew point at all times during the sampling.

(ii) You may use a dilution probe to reduce the dew point of the sample gas.

(iii) You may use a refrigerated-type condenser or similar device (e.g., permeation dryer) to remove condensate continuously from sample gas while maintaining minimal contact between condensate and sample gas.

(iv) If your analyzer measures nitric oxide (NO) and nitrogen dioxide (NO_2) separately, you must use both NO and NO_2 calibration gases. Otherwise, you must substitute NO_2 calibration gas for NO calibration gas in the performance of system bias checks.

(v) You must conduct dynamic spiking according to EPA Reference Method 7E, section 16.1, of Appendix A–4 of this part using NO_2 as the spike gas.

(5) Instead of a NO_X concentration CEMS meeting Performance Specification 2, you may apply an FTIR CEMS meeting the requirements of Performance Specification 15 of Appendix B of this part to measure NO_X concentrations. Should you use an FTIR CEMS,

you must replace the Relative Accuracy Test Audit requirements of Procedure 1 of appendix F of this part with the validation requirements and criteria of Performance Specification 15, sections 11.1.1 and 12.0, of Appendix B of this part.

(c) *Determining NO_X mass emissions rate values.* You must use the NO_X concentration CEMS, acid production, gas flow rate monitor and other monitoring data to calculate emissions data in units of the applicable limit (lb NO_X/ton of acid produced expressed as 100 percent nitric acid).

(1) You must install, calibrate, maintain, and operate a CEMS for measuring and recording the stack gas flow rates to use in combination with data from the CEMS for measuring emissions concentrations of NO_X to produce data in units of mass rate (e.g., lb/hr) of NO_X on an hourly basis. You will operate and certify the continuous emissions rate monitoring system (CERMS) in accordance with the provisions of § 60.13 and Performance Specification 6 of Appendix B of this part. You must comply with the following provisions in (c)(1)(i) through (iii) of this section.

(i) You must use a stack gas flow rate sensor with a full scale output of at least 125 percent of the maximum expected exhaust volumetric flow rate (see Performance Specification 6, section 8, of Appendix B of this part).

(ii) For conducting the relative accuracy test audits, per Performance Specification 6, section 8.2 of Appendix B of this part and Procedure 1, section 5.1.1, of Appendix F of this part, you must use either EPA Reference Method 2, 2F, or 2G of Appendix A–4 of this part. You may also apply Method 2H in conjunction with other velocity measurements.

(iii) You must verify that the CERMS complies with the quality assurance requirements in Procedure 1 of Appendix F of this part. You must conduct relative accuracy testing to provide for calculating the relative accuracy for RATA and RAA determinations in units of lb/hour.

(2) You must determine the nitric acid production parameters (production rate and concentration) by installing, calibrating, maintaining, and operating a permanent monitoring system (e.g., weigh scale, volume flow meter, mass flow meter, tank volume) to measure and record the weight rates of nitric acid produced in tons per hour. If your nitric acid production rate measurements are for periods longer than hourly (e.g., daily values), you will determine average hourly production values, tons acid/hr, by dividing the total acid production by the number of hours of process operation for the subject measurement period. You must comply with the following provisions in (c)(2)(i) through (iv) of this section.

(i) You must verify that each component of the monitoring system has an accuracy and precision of no more than ±5 percent of full scale.

(ii) You must analyze product concentration via titration or by determining the temperature and specific gravity of the nitric acid. You may also use ASTM E1584–11 (incorporated by reference, see § 60.17), for determining the concentration of nitric acid in percent. You must determine product concentration daily.

(iii) You must use the acid concentration to express the nitric acid production as 100 percent nitric acid.

(iv) You must record the nitric acid production, expressed as 100 percent nitric acid, and the hours of operation.

(3) You must calculate hourly NO_X emissions rates in units of the standard (lb/ton acid) for each hour of process operation. For process operating periods for which there is little or no acid production (e.g., startup or shutdown), you must use the average hourly acid production rate determined from the data collected over the previous 30 days of normal acid production periods (see § 60.75a).

(d) *Continuous monitoring system.* For each continuous monitoring system, including NO_X concentration measurement, volumetric flow rate measurement, and nitric acid production measurement equipment, you must meet the requirements in paragraphs (d)(1) through (3) of this section.

(1) You must operate the monitoring system and collect data at all required intervals at all times the affected facility is operating except for periods of monitoring system malfunctions or out-of-control periods as defined in Appendix F, sections 4 and 5, of this part,

repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments.

(2) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in calculating emissions and the status of compliance with the applicable emissions limit in accordance with § 60.72a(a).

(e) *Initial performance testing.* You must conduct an initial performance test to demonstrate compliance with the NO_X emissions limit under § 60.72a(a) beginning in the calendar month following initial certification of the NO_X and flow rate monitoring CEMS. The initial performance test consists of collection of hourly NO_X average concentration, mass flow rate recorded with the certified NO_X concentration and flow rate CEMS and the corresponding acid generation (tons) data for all of the hours of operation for the first 30 days beginning on the first day of the first month following completion of the CEMS installation and certification as described above. You must assure that the CERMS meets all of the data quality assurance requirements as per § 60.13 and Appendix F, Procedure 1, of this part and you must use the data from the CERMS for this compliance determination.

§ 60.74a Affirmative defense for violations of emission standards during malfunction.

In response to an action to enforce the standards set forth in § 60.72a, you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected facility was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction

and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

§ 60.75a Calculations.

(a) You must calculate the 30 operating day rolling arithmetic average emissions rate in units of the applicable emissions standard (lb NO_X/ton 100 percent acid produced) at the end of each operating day using all of the quality assured hourly average CEMS data for the previous 30 operating days.

(b) You must calculate the 30 operating day average emissions rate according to Equation 1:

$$E_{30} = k\frac{1}{n}\frac{\sum_{i=1}^{n} C_i\, Q_i}{P_i} \qquad \text{(Eq. 1)}$$

Where:

E_{30} = 30 operating day average emissions rate of NO_X, lb NO_X/ton of 100 percent HNO_3;

C_i = concentration of NO_X for hour i, ppmv;

Q_i = volumetric flow rate of effluent gas for hour i, where C_i and Q_i are on the same basis (either wet or dry), scf/hr;

P_i = total acid produced during production hour i, tons 100 percent HNO_3;

k = conversion factor, 1.194×10^{-7} for NO_X; and

n = number of operating hours in the 30 operating day period, i.e., n is between 30 and 720.

§ 60.76a Recordkeeping.

(a) For the NO_X emissions rate, you must keep records for and results of the performance evaluations of the continuous emissions monitoring systems.

(b) You must maintain records of the following information for each 30 operating day period:

(1) Hours of operation.

(2) Production rate of nitric acid, expressed as 100 percent nitric acid.

(3) 30 operating day average NO_X emissions rate values.

(c) You must maintain records of the following time periods:

(1) Times when you were not in compliance with the emissions standards.

(2) Times when the pollutant concentration exceeded full span of the NO_X monitoring equipment.

(3) Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.

(d) You must maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.

(e) You must maintain records of any modifications to CEMS which could affect the ability of the CEMS to comply with applicable performance specifications.

(f) For each malfunction, you must maintain records of the following information:

(1) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(2) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

§ 60.77a Reporting.

(a) The performance test data from the initial and subsequent performance tests and from the performance evaluations of the continuous monitors must be submitted to the Administrator at the appropriate address as shown in 40 CFR 60.4.

(b) The following information must be reported to the Administrator for each 30 operating day period where you were not in compliance with the emissions standard:

(1) Time period;

(2) NO_X emission rates (lb/ton of acid produced);

(3) Reasons for noncompliance with the emissions standard; and

(4) Description of corrective actions taken.

(c) You must also report the following whenever they occur:

(1) Times when the pollutant concentration exceeded full span of the NO_X pollutant monitoring equipment.

(2) Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.

(d) You must report any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications.

(e) Within 60 days of completion of the relative accuracy test audit (RATA) required by this subpart, you must submit the data from that audit to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/SSL/cdx/EPA_Home.asp*). You must submit performance test data in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (*http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods listed on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) by registered letter to EPA and the same ERT file with the CBI omitted to EPA via CDX as described earlier in this paragraph. Mark the compact disk or other commonly used electronic storage media clearly as CBI and mail to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. At the discretion of the delegated authority, you must also submit these reports to the delegated authority in the format specified by the delegated authority. You must submit the other information as required in the performance evaluation as described in § 60.2 and as required in this chapter.

(f) If a malfunction occurred during the reporting period, you must submit a report that contains the following:

(1) The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.

(2) A description of actions taken by an owner or operator during a malfunction of an affected facility to minimize emissions in accordance with § 60.11(d), including actions taken to correct a malfunction.

Subpart H—Standards of Performance for Sulfuric Acid Plants

§ 60.80 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each sulfuric acid production unit, which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

§ 60.81 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Sulfuric acid production unit* means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

(b) *Acid mist* means sulfuric acid mist, as measured by Method 8 of appendix A to this part or an equivalent or alternative method.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20794, June 14, 1974]

§ 60.82 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of 2 kg per metric ton of acid produced (4 lb per ton), the production being expressed as 100 percent H_2SO_4.

[39 FR 20794, June 14, 1974]

§ 60.83 Standard for acid mist.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain acid mist, expressed as H_2SO_4, in excess of 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent H_2SO_4.

(2) Exhibit 10 percent opacity, or greater.

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975]

§ 60.84 Emission monitoring.

(a) A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under § 60.13(d), shall be sulfur dioxide (SO_2). Method 8 shall be used for conducting monitoring system performance evaluations under § 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide.

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999–AP–13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF=k[(1.000-0.015r)/(r-s)]$$

where:

CF=conversion factor (kg/metric ton per ppm, lb/ton per ppm).

k=constant derived from material balance. For determining CF in metric units, k=0.0653. For determining CF in English units, k=0.1306.

r=percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.

s=percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under paragraph (a) of this section.

(c) The owner or operator shall record all conversion factors and values under paragraph (b) of this section from which they were computed (i.e., CF, r, and s).

(d) Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following

continuous emission monitoring approach and calculation procedures in determining SO_2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in the measurement of gas velocities or production rate. Continuous emission monitoring systems for measuring SO_2, O_2, and CO_2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for the SO_2 monitor shall be as specified in paragraph (b) of this section. The span value for CO_2 (if required) shall be 10 percent and for O_2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary. Calculate the SO_2 emission rate as follows:

$$E_s=(C_s\ S)/[0.265-(0.126\ \%O_2)-(A\ \%CO_2)]$$

where:

E_s=emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 produced.
C_s=concentration of SO_2, kg/dscm (lb/dscf).
S=acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.
$\%O_2$=oxygen concentration, percent dry basis.
A=auxiliary fuel factor,
=0.00 for no fuel.
=0.0226 for methane.
=0.0217 for natural gas.
=0.0196 for propane.
=0.0172 for No 2 oil.
=0.0161 for No 6 oil.
=0.0148 for coal.
=0.0126 for coke.
$\%CO_2$= carbon dioxide concentration, percent dry basis.

NOTE: It is necessary in some cases to convert measured concentration units to other units for these calculations:

Use the following table for such conversions:

From—	To—	Multiply by—
g/scm	kg/scm	10^{-3}
mg/scm	kg/scm	10^{-6}
ppm (SO_2)	kg/scm	2.660×10^{-6}
ppm (SO_2)	lb/scf	1.660×10^{-7}

(e) For the purpose of reports under § 60.7(c), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under § 60.82.

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975; 48 FR 23611, May 25, 1983; 48 FR 4700, Sept. 29, 1983; 48 FR 48669, Oct. 20, 1983; 54 FR 6666, Feb. 14, 1989; 65 FR 61753, Oct. 17, 2000]

§ 60.85 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the SO_2 acid mist, and visible emission standards in §§ 60.82 and 60.83 as follows:

(1) The emission rate (E) of acid mist or SO_2 shall be computed for each run using the following equation:

$$E=(CQ_{sd})/(PK)$$

where:

E=emission rate of acid mist or SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.
C=concentration of acid mist or SO_2, g/dscm (lb/dscf).
Q_{sd}=volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).
P=production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).
K=conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 8 shall be used to determine the acid mist and SO_2 concentrations (C's) and the volumetric flow rate (Q_{sd}) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(3) Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The SO_2 or acid mist emission rate is calculated as described in § 60.84(d), substituting the acid mist concentration for C_s as appropriate.

[54 FR 6666, Feb. 14, 1989]

Subpart I—Standards of Performance for Hot Mix Asphalt Facilities

§ 60.90 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977, as amended at 51 FR 12325, Apr. 10, 1986]

§ 60.91 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Hot mix asphalt facility* means any facility, as described in § 60.90, used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements.

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf).

(2) Exhibit 20 percent opacity, or greater.

[39 FR 9314, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.93 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.92 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

Subpart J—Standards of Performance for Petroleum Refineries

§ 60.100 Applicability, designation of affected facility, and reconstruction.

(a) The provisions of this subpart are applicable to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants with a design capacity for sulfur feed of 20 long tons per day (LTD) or less. The Claus sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery.

(b) Any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device under paragraph (a) of this section other than a flare which commences construction, reconstruction or modification after June 11, 1973, and on or before May 14, 2007, or any fuel gas combustion device under paragraph (a) of this section that is also a flare which commences construction, reconstruction or modification after June 11, 1973, and on or before June 24, 2008, or any Claus sulfur recovery plant under paragraph (a) of this section which commences construction, reconstruction or modification after October 4, 1976, and on or before May 14, 2007, is subject to the requirements of this subpart except as provided under paragraphs (c) through (e) of this section.

(c) Any fluid catalytic cracking unit catalyst regenerator under paragraph (b) of this section which commences construction, reconstruction, or modification on or before January 17, 1984, is exempted from § 60.104(b).

(d) Any fluid catalytic cracking unit in which a contact material reacts with petroleum derivatives to improve feedstock quality and in which the contact material is regenerated by burning off coke and/or other deposits and that commences construction, reconstruction, or modification on or before January 17, 1984, is exempt from this subpart.

(e) Owners or operators may choose to comply with the applicable provisions of subpart Ja of this part to satisfy the requirements of this subpart for an affected facility.

(f) For purposes of this subpart, under § 60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following January 17, 1984. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

[43 FR 10868, Mar. 15, 1978, as amended at 44 FR 61543, Oct. 25, 1979; 54 FR 34026, Aug. 17, 1989; 73 FR 35865, June 24, 2008; 77 FR 56463, Sep. 12, 2012]

§ 60.101 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A.

(a) *Petroleum refinery* means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(b) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(c) *Process gas* means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(d) *Fuel gas* means any gas which is generated at a petroleum refinery and which is combusted. Fuel gas includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Fuel gas does not include gases generated by catalytic cracking unit catalyst regenerators and fluid coking burners. Fuel gas does not include vapors that are collected and combusted in a thermal oxidizer or flare installed to control emissions from wastewater treatment units or marine tank vessel loading operations.

(e) *Process upset gas* means any gas generated by a petroleum refinery process unit as a result of start-up, shut-down, upset or malfunction.

(f) *Refinery process unit* means any segment of the petroleum refinery in which a specific processing operation is conducted.

(g) *Fuel gas combustion device* means any equipment, such as process heaters, boilers and flares used to combust fuel gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid.

(h) *Coke burn-off* means the coke removed from the surface of the fluid catalytic cracking unit catalyst by

combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in § 60.106.

(i) *Claus sulfur recovery plant* means a process unit which recovers sulfur from hydrogen sulfide by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

(j) *Oxidation control system* means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide.

(k) *Reduction control system* means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to hydrogen sulfide.

(l) *Reduced sulfur compounds* means hydrogen sulfide (H_2S), carbonyl sulfide (COS) and carbon disulfide (CS_2).

(m) *Fluid catalytic cracking unit* means a refinery process unit in which petroleum derivatives are continuously charged; hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing; and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery.

(n) *Fluid catalytic cracking unit catalyst regenerator* means one or more regenerators (multiple regenerators) which comprise that portion of the fluid catalytic cracking unit in which coke burn-off and catalyst or contact material regeneration occurs, and includes the regenerator combustion air blower(s).

(o) *Fresh feed* means any petroleum derivative feedstock stream charged directly into the riser or reactor of a fluid catalytic cracking unit except for petroleum derivatives recycled within the fluid catalytic cracking unit, fractionator, or gas recovery unit.

(p) *Contact material* means any substance formulated to remove metals, sulfur, nitrogen, or any other contaminant from petroleum derivatives.

(q) *Valid day* means a 24-hour period in which at least 18 valid hours of data are obtained. A ''valid hour'' is one in which at least 2 valid data points are obtained.

[39 FR 9315, Mar. 8, 1974, as amended at 43 FR 10868, Mar. 15, 1978; 44 FR 13481, Mar. 12, 1979; 45 FR 79453, Dec. 1, 1980; 54 FR 34027, Aug. 17, 1989; 73 FR 35865, June 24, 2008; 77 FR 56463, Sep. 12, 2012]

§ 60.102 Standard for particulate matter.

Each owner or operator of any fluid catalytic cracking unit catalyst regenerator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the fluid catalytic cracking unit catalyst regenerator will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator:

(1) Particulate matter in excess of 1.0 kg/Mg (2.0 lb/ton) of coke burn-off in the catalyst regenerator.

(2) Gases exhibiting greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period.

(b) Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator or waste heat boiler in which auxiliary or supplemental liquid or solid fossil fuel is burned, particulate matter in excess of that permitted by paragraph (a)(1) of this section may be emitted to the atmosphere, except that the incremental rate of particulate matter emissions shall not exceed 43 grams per Gigajoule (g/GJ) (0.10 lb/million British thermal units (Btu)) of

heat input attributable to such liquid or solid fossil fuel.

[39 FR 9315, Mar. 8, 1974, as amended at 42 FR 32427, June 24, 1977; 42 FR 39389, Aug. 4, 1977; 43 FR 10868, Feb. 15, 1978; 54 FR 34027, Aug. 17, 1989; 65 FR 61753, Oct. 17, 2000; 73 FR 35866, June 24, 2008]

§ 60.103 Standard for carbon monoxide.

Each owner or operator of any fluid catalytic cracking unit catalyst regenerator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the fluid catalytic cracking unit catalyst regenerator will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator any gases that contain carbon monoxide (CO) in excess of 500 ppm by volume (dry basis).

[54 FR 34027, Aug. 17, 1989, as amended at 55 FR 40175, Oct. 2, 1990]

§ 60.104 Standards for sulfur oxides.

Each owner or operator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall:

(1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf). The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this paragraph.

(2) Discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of:

(i) For an oxidation control system or a reduction control system followed by incineration, 250 ppm by volume (dry basis) of sulfur dioxide (SO_2) at zero percent excess air.

(ii) For a reduction control system not followed by incineration, 300 ppm by volume of reduced sulfur compounds and 10 ppm by volume of hydrogen sulfide (H_2S), each calculated as ppm SO_2 by volume (dry basis) at zero percent excess air.

(b) Each owner or operator that is subject to the provisions of this subpart shall comply with one of the following conditions for each affected fluid catalytic cracking unit catalyst regenerator:

(1) With an add-on control device, reduce SO_2 emissions to the atmosphere by 90 percent or maintain SO_2 emissions to the atmosphere less than or equal to 50 ppm by volume (ppmv), whichever is less stringent; or

(2) Without the use of an add-on control device to reduce SO_2 emission, maintain sulfur oxides emissions calculated as SO_2 to the atmosphere less than or equal to 9.8 kg/Mg (20 lb/ton) coke burn-off; or

(3) Process in the fluid catalytic cracking unit fresh feed that has a total sulfur content no greater than 0.30 percent by weight.

(c) Compliance with paragraph (b)(1), (b)(2), or (b)(3) of this section is determined daily on a 7-day rolling average basis using the appropriate procedures outlined in § 60.106.

(d) A minimum of 22 valid days of data shall be obtained every 30 rolling successive calendar days when complying with paragraph (b)(1) of this section.

[43 FR 10869, Mar. 15, 1978, as amended at 54 FR 34027, Aug. 17, 1989; 55 FR 40175, Oct. 2, 1990; 65 FR 61754, Oct. 17, 2000; 73 FR 35866, June 24, 2008]

§ 60.105 Monitoring of emissions and operations.

(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or

operator subject to the provisions of this subpart as follows:

(1) For fluid catalytic cracking unit catalyst regenerators subject to § 60.102(a)(2), an instrument for continuously monitoring and recording the opacity of emissions into the atmosphere. The instrument shall be spanned at 60, 70, or 80 percent opacity.

(2) For fluid catalytic cracking unit catalyst regenerators subject to § 60.103(a), an instrument for continuously monitoring and recording the concentration by volume (dry basis) of CO emissions into the atmosphere, except as provided in paragraph (a)(2) (ii) of this section.

(i) The span value for this instrument is 1,000 ppm CO.

(ii) A CO continuous monitoring system need not be installed if the owner or operator demonstrates that the average CO emissions are less than 50 ppm (dry basis) and also files a written request for exemption to the Administrator and receives such an exemption. The demonstration shall consist of continuously monitoring CO emissions for 30 days using an instrument that shall meet the requirements of Performance Specification 4 of appendix B of this part. The span value shall be 100 ppm CO instead of 1,000 ppm, and the relative accuracy limit shall be 10 percent of the average CO emissions or 5 ppm CO, whichever is greater. For instruments that are identical to Method 10 and employ the sample conditioning system of Method 10A, the alternative relative accuracy test procedure in § 10.1 of Performance Specification 2 may be used in place of the relative accuracy test.

(3) For fuel gas combustion devices subject to § 60.104(a)(1), either an instrument for continuously monitoring and recording the concentration by volume (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere or monitoring as provided in paragraph (a)(4) of this section). The monitor shall include an oxygen monitor for correcting the data for excess.

(i) The span values for this monitor are 50 ppm SO_2 and 25 percent oxygen (O_2).

(ii) The SO_2 monitoring level equivalent to the H_2S standard under § 60.104(a)(1) shall be 20 ppm (dry basis, zero percent excess air).

(iii) The performance evaluations for this SO_2 monitor under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations. Method 6 samples shall be taken at a flow rate of approximately 2 liters/min for at least 30 minutes. The relative accuracy limit shall be 20 percent or 4 ppm, whichever is greater, and the calibration drift limit shall be 5 percent of the established span value.

(iv) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location (i.e., after one of the combustion devices), if monitoring at this location accurately represents the SO_2 emissions into the atmosphere from each of the combustion devices.

(4) Instead of the SO_2 monitor in paragraph (a)(3) of this section for fuel gas combustion devices subject to § 60.104(a)(1), an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device.

(i) The span value for this instrument is 425 mg/dscm H_2S.

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.

(iii) The performance evaluations for this H_2S monitor under § 60.13(c) shall use Performance Specification 7. Method 11, 15, 15A, or 16 shall be used for conducting the relative accuracy evaluations.

(iv) The owner or operator of a fuel gas combustion device is not required to comply with paragraph (a)(3) or (4) of this section for fuel gas streams that are exempt under § 60.104(a)(1) and fuel gas streams combusted in a fuel gas combustion device that are inherently low in sulfur content. Fuel gas streams meeting one of the requirements in paragraphs (a)(4)(iv)(A) through (D) of this section will be considered inherently low in sulfur content. If the composition of a fuel gas stream changes such that it is no longer exempt under § 60.104(a)(1) or it no longer meets one

of the requirements in paragraphs (a)(4)(iv)(A) through (D) of this section, the owner or operator must begin continuous monitoring under paragraph (a)(3) or (4) of this section within 15 days of the change.

(A) Pilot gas for heaters and flares.

(B) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.

(C) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, the catalytic reforming unit, the isomerization unit, and HF alkylation process units.

(D) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in paragraph (b) of this section.

(5) For Claus sulfur recovery plants with oxidation control systems or reduction control systems followed by incineration subject to § 60.104(a)(2)(i), an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are 500 ppm SO_2 and 25 percent O_2.

(ii) The performance evaluations for this SO_2 monitor under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(6) For Claus sulfur recovery plants with reduction control systems not followed by incineration subject to § 60.104(a)(2)(ii), an instrument for continuously monitoring and recording the concentration of reduced sulfur and O_2 emissions into the atmosphere. The reduced sulfur emissions shall be calculated as SO_2 (dry basis, zero percent excess air).

(i) The span values for this monitor are 450 ppm reduced sulfur and 25 percent O_2.

(ii) The performance evaluations for this reduced sulfur (and O_2) monitor under § 60.13(c) shall use Performance Specification 5 of appendix B of this part(and Performance Specification 3 of appendix B of this partfor the O_2 analyzer). Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations. If Method 3 yields O_2 concentrations below 0.25 percent during the performance specification test, the O_2 concentration may be assumed to be zero and the reduced sulfur CEMS need not include an O_2 monitor.

(7) In place of the reduced sulfur monitor under paragraph (a)(6) of this section, an instrument using an air or O_2 dilution and oxidation system to convert the reduced sulfur to SO_2 for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of the resultant SO_2. The monitor shall include an oxygen monitor for correcting the data for excess oxygen.

(i) The span values for this monitor are 375 ppm SO_2 and 25 percent O_2.

(ii) For reporting purposes, the SO_2 exceedance level for this monitor is 250 ppm (dry basis, zero percent excess air).

(iii) The performance evaluations for this SO_2 (and O_2) monitor under § 60.13(c) shall use Performance Specification 5. Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations.

(8) An instrument for continuously monitoring and recording concentrations of SO_2 in the gases at both the inlet and outlet of the SO_2 control device from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply specifically with the 90 percent reduction option under § 60.104(b)(1).

(i) The span value of the inlet monitor shall be set at 125 percent of the maximum estimated hourly potential SO_2 emission concentration entering the control device, and the span value of the outlet monitor shall be set at 50 percent of the maximum estimated hourly potential SO_2 emission concentration entering the control device.

(ii) The performance evaluations for these SO_2 monitors under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(9) An instrument for continuously monitoring and recording concentrations of SO_2 in the gases discharged into the atmosphere from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply specifically with the 50 ppmv emission limit under § 60.104 (b)(1).

(i) The span value of the monitor shall be set at 50 percent of the maximum hourly potential SO_2 emission concentration of the control device.

(ii) The performance evaluations for this SO_2 monitor under § 60.13 (c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(10) An instrument for continuously monitoring and recording concentrations of oxygen (O_2) in the gases at both the inlet and outlet of the sulfur dioxide control device (or the outlet only if specifically complying with the 50 ppmv standard) from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator has elected to comply with § 60.104(b)(1). The span of this continuous monitoring system shall be set at 10 percent.

(11) The continuous monitoring systems under paragraphs (a)(8), (a)(9), and (a)(10) of this section are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, or malfunction, except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments.

(12) The owner or operator shall use the following procedures to evaluate the continuous monitoring systems under paragraphs (a)(8), (a)(9), and (a)(10) of this section.

(i) Method 3 or 3A and Method 6 or 6C for the relative accuracy evaluations under the § 60.13(e) performance evaluation.

(ii) appendix F, Procedure 1, including quarterly accuracy determinations and daily calibration drift tests.

(13) When seeking to comply with § 60.104(b)(1), when emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using one of the following methods to provide emission data for a minimum of 18 hours per day in at least 22 out of 30 rolling successive calendar days.

(i) The test methods as described in § 60.106(k);

(ii) A spare continuous monitoring system; or

(iii) Other monitoring systems as approved by the Administrator.

(b) An owner or operator may demonstrate that a fuel gas stream combusted in a fuel gas combustion device subject to § 60.104(a)(1) that is not specifically exempted in § 60.105(a)(4)(iv) is inherently low in sulfur. A fuel gas stream that is determined to be low-sulfur is exempt from the monitoring requirements in paragraphs (a)(3) and (4) of this section until there are changes in operating conditions or stream composition.

(1) The owner or operator shall submit to the Administrator a written application for an exemption from monitoring. The application must contain the following information:

(i) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system, and the affected fuel gas combustion device(s) to be considered;

(ii) A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);

(iii) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;

(iv) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv. Sampling

data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. The owner or operator shall use detector tubes (''length-of-stain tube'' type measurement) following the ''Gas Processors Association Standard 2377–86, Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes,'' 1986 Revision (incorporated by reference—see § 60.17), with ranges 0–10/0–100 ppm (N = 10/1) to test the applicant fuel gas stream for H_2S; and

(v) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H_2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out, and, therefore, should be representative of typical operating conditions affecting H_2S content in the fuel gas stream going to the loading rack flare).

(2) The effective date of the exemption is the date of submission of the information required in paragraph (b)(1) of this section).

(3) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator will follow the procedures in paragraph (b)(3)(i), (b)(3)(ii), or (b)(3)(iii) of this section.

(i) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H_2S test on a grab sample and record the results as proof that the concentration is still within the range.

(ii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of paragraph (b)(1) of this section within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(iii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H_2S monitoring using daily stain sampling to demonstrate compliance. The owner or operator must begin monitoring according to the requirements in paragraphs (a)(1) or (a)(2) of this section as soon as practicable but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H_2S concentration limit. The owner or operator must determine a rolling 365-day average using the stain sampling results; an average H_2S concentration of 5 ppmv must be used for days prior to the operation change.

(c) The average coke burn-off rate (Mg (tons) per hour) and hours of operation shall be recorded daily for any fluid catalytic cracking unit catalyst regenerator subject to § 60.102, § 60.103, or § 60.104(b)(2).

(d) For any fluid catalytic cracking unit catalyst regenerator under § 60.102 that uses an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the rate of combustion of liquid or solid fossil-fuels and the hours of operation during which liquid or solid fossil-fuels are combusted in the incinerator-waste heat boiler.

(e) For the purpose of reports under § 60.7(c), periods of excess emissions that shall be determined and reported are defined as follows:

NOTE: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

(1) *Opacity*. All 1-hour periods that contain two or more 6-minute periods during which the average opacity as

measured by the continuous monitoring system under § 60.105(a)(1) exceeds 30 percent.

(2) *Carbon monoxide.* All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system under § 60.105(a)(2) exceeds 500 ppm.

(3) *Sulfur dioxide from fuel gas combustion.* (i) All rolling 3-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(3) exceeds 20 ppm (dry basis, zero percent excess air); or

(ii) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system under § 60.105(a)(4) exceeds 230 mg/dscm (0.10 gr/dscf).

(4) *Sulfur dioxide from Claus sulfur recovery plants.* (i) All 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(5) exceeds 250 ppm (dry basis, zero percent excess air); or

(ii) All 12-hour periods during which the average concentration of reduced sulfur (as SO_2) as measured by the reduced sulfur continuous monitoring system under § 60.105(a)(6) exceeds 300 ppm; or

(iii) All 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(7) exceeds 250 ppm (dry basis, zero percent excess air).

[39 FR 9315, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975; 42 FR 32427, June 24, 1977; 42 FR 39389, Aug. 4, 1977; 43 FR 10869, Mar. 15, 1978; 48 FR 23611, May 25, 1983; 50 FR 31701, Aug. 5, 1985; 54 FR 34028, Aug. 17, 1989; 55 FR 40175, Oct. 2, 1990; 65 FR 61754, Oct. 17, 2000; 73 FR 35866, June 24, 2008]

§ 60.106 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter (PM) standards in § 60.102(a) as follows:

(1) The emission rate (E) of PM shall be computed for each run using the following equation:

$$E = \frac{c_s Q_{sd}}{K R_c}$$

Where:

E = Emission rate of PM, kg/Mg (lb/ton) of coke burn-off.

c_s = Concentration of PM, g/dscm (gr/dscf).

Q_{sd} = Volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

R_c = Coke burn-off rate, Mg/hr (ton/hr) coke.

K=Conversion factor, 1,000 g/kg (7,000 gr/lb).

(2) Method 5B or 5F is to be used to determine particulate matter emissions and associated moisture content from affected facilities without wet FGD systems; only Method 5B is to be used after wet FGD systems. The sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times may be approved by the Administrator when process variables or other factors preclude sampling for at least 60 minutes.

(3) The coke burn-off rate (R_c) shall be computed for each run using the following equation:

$$R_c = K_1 Q_r (\%CO_2 + \%CO) + K_2 Q_a - K_3 Q_r (\%CO/2 + \%CO_2 + \%O_2) + K_3 Q_{oxy} (\%O_{oxy})$$

Where:

R_c = Coke burn-off rate, kilograms per hour (kg/hr) (lb/hr).

Q_r = Volumetric flow rate of exhaust gas from fluid catalytic cracking unit regenerator before entering the emission control system, dscm/min (dscf/min).

Q_a = Volumetric flow rate of air to fluid catalytic cracking unit regenerator, as determined from the fluid catalytic cracking unit control room instrumentation, dscm/min (dscf/min).

Q_{oxy} = Volumetric flow rate of O_2 enriched air to fluid catalytic cracking unit regenerator, as determined from the fluid catalytic cracking unit control room instrumentation, dscm/min (dscf/min).

$\%CO_2$ = Carbon dioxide concentration in fluid catalytic cracking unit regenerator exhaust, percent by volume (dry basis).

%CO = CO concentration in FCCU regenerator exhaust, percent by volume (dry basis).

$\%O_2$ = O_2 concentration in fluid catalytic cracking unit regenerator exhaust, percent by volume (dry basis).

$\%O_{oxy}$ = O_2 concentration in O_2 enriched air stream inlet to the fluid catalytic cracking unit regenerator, percent by volume (dry basis).

K_1 = Material balance and conversion factor, 0.2982 (kg-min)/(hr-dscm-%) [0.0186 (lb-min)/(hr-dscf-%)].

K_2 = Material balance and conversion factor, 2.088 (kg-min)/(hr-dscm) [0.1303 (lb-min)/(hr-dscf)].

K_3 = Material balance and conversion factor, 0.0994 (kg-min)/(hr-dscm-%) [0.00624 (lb-min)/(hr-dscf-%)].

(i) Method 2 shall be used to determine the volumetric flow rate (Q_r).

(ii) The emission correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine CO_2, CO, and O_2 concentrations.

(4) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(c) If auxiliary liquid or solid fossil-fuels are burned in an incinerator-waste heat boiler, the owner or operator shall determine the emission rate of PM permitted in § 60.102(b) as follows:

(1) The allowable emission rate (E_s) of PM shall be computed for each run using the following equation:

$$E_s = F + A\ (H/R_c)$$

Where:

E_s = Emission rate of PM allowed, kg/Mg (lb/ton) of coke burn-off in catalyst regenerator.

F = Emission standard, 1.0 kg/Mg (2.0 lb/ton) of coke burn-off in catalyst regenerator.

A = Allowable incremental rate of PM emissions, 43 g/GJ (0.10 lb/million Btu).

H = Heat input rate from solid or liquid fossil fuel, GJ/hr (million Btu/hr).

R_c = Coke burn-off rate, Mg coke/hr (ton coke/hr).

(2) Procedures subject to the approval of the Administrator shall be used to determine the heat input rate.

(3) The procedure in paragraph (b)(3) of this section shall be used to determine the coke burn-off rate (R_c).

(d) The owner or operator shall determine compliance with the CO standard in § 60.103(a) by using the integrated sampling technique of Method 10 to determine the CO concentration (dry basis). The sampling time for each run shall be 60 minutes.

(e)(1) The owner or operator shall determine compliance with the H_2S standard in § 60.104(a)(1) as follows: Method 11, 15, 15A, or 16 shall be used to determine the H_2S concentration. The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line.

(i) For Method 11, the sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times shall be taken at about 1-hour intervals. The arithmetic average of these two samples shall constitute a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H_2S may necessitate sampling for longer periods of time.

(ii) For Method 15 or 16, at least three injects over a 1-hour period shall constitute a run.

(iii) For Method 15A, a 1-hour sample shall constitute a run.

(2) Where emissions are monitored by § 60.105(a)(3), compliance with § 60.104(a)(1) shall be determined using Method 6 or 6C and Method 3 or 3A. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6. A 1-hour sample shall constitute a run. Method 6 samples shall be taken at a rate of approximately 2 liters/min. The ppm correction factor (Method 6) and the sampling location in paragraph (f)(1) of this section apply. Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 6 or 6C.

(f) The owner or operator shall determine compliance with the SO_2 and the H_2S and reduced sulfur standards in § 60.104(a)(2) as follows:

(1) Method 6 shall be used to determine the SO_2 concentration. The concentration in mg/dscm obtained by

Method 6 or 6C is multiplied by 0.3754 to obtain the concentration in ppm. The sampling point in the duct shall be the centroid of the cross section if the cross-sectional area is less than 5.00 m^2 (53.8 ft^2) or at a point no closer to the walls than 1.00 m (39.4 in.) if the cross-sectional area is 5.00 m^2 or more and the centroid is more than 1 m from the wall. The sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf) for each sample. Eight samples of equal sampling times shall be taken at about 30-minute intervals. The arithmetic average of these eight samples shall constitute a run. For Method 6C, a run shall consist of the arithmetic average of four 1-hour samples. Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 6 or 6C. The sampling time for each sample shall be equal to the time it takes for two Method 6 samples. The moisture content from this sample shall be used to correct the corresponding Method 6 samples for moisture. For documenting the oxidation efficiency of the control device for reduced sulfur compounds, Method 15 shall be used following the procedures of paragraph (f)(2) of this section.

(2) Method 15 shall be used to determine the reduced sulfur and H_2 S concentrations. Each run shall consist of 16 samples taken over a minimum of 3 hours. The sampling point shall be the same as that described for Method 6 in paragraph (f)(1) of this section. To ensure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3.0 lpm (0.10 cfm). The SO_2 equivalent for each run shall be calculated after being corrected for moisture and oxygen as the arithmetic average of the SO_2 equivalent for each sample during the run. Method 4 shall be used to determine the moisture content of the gases as the paragraph (f)(1) of this section. The sampling time for each sample shall be equal to the time it takes for four Method 15 samples.

(3) The oxygen concentration used to correct the emission rate for excess air shall be obtained by the integrated sampling and analysis procedure of Method 3 or 3A. The samples shall be taken simultaneously with the SO_2, reduced sulfur and H_2S, or moisture samples. The SO_2, reduced sulfur, and H_2S samples shall be corrected to zero percent excess air using the equation in paragraph (h)(6) of this section.

(g) Each performance test conducted for the purpose of determining compliance under § 60.104(b) shall consist of all testing performed over a 7-day period using Method 6 or 6C and Method 3 or 3A. To determine compliance, the arithmetic mean of the results of all the tests shall be compared with the applicable standard.

(h) For the purpose of determining compliance with § 60.104(b)(1), the following calculation procedures shall be used:

(1) Calculate each 1-hour average concentration (dry, zero percent oxygen, ppmv) of sulfur dioxide at both the inlet and the outlet to the add-on control device as specified in § 60.13(h). These calculations are made using the emission data collected under § 60.105(a).

(2) Calculate a 7-day average (arithmetic mean) concentration of sulfur dioxide for the inlet and for the outlet to the add-on control device using all of the 1-hour average concentration values obtained during seven successive 24-hour periods.

(3) Calculate the 7-day average percent reduction using the following equation:

$$Rso_2 = 100(Cso_2(i) - Cso_2(o))/Cso_2(i)$$

where:

Rso_2 = 7-day average sulfur dioxide emission reduction, percent

$Cso_2(i)$ = sulfur dioxide emission concentration determined in § 60.106(h)(2) at the inlet to the add-on control device, ppmv

$Cso_2(o)$ = sulfur dioxide emission concentration determined in § 60.106(h)(2) at the outlet to the add-on control device, ppmv

100 = conversion factor, decimal to percent

(4) Outlet concentrations of sulfur dioxide from the add-on control device for compliance with the 50 ppmv standard, reported on a dry, O_2-free basis, shall be calculated using the procedures outlined in § 60.106(h)(1) and (2) above, but for the outlet monitor only.

(5) If supplemental sampling data are used for determining the 7-day averages under paragraph (h) of this section and such data are not hourly averages,

then the value obtained for each supplemental sample shall be assumed to represent the hourly average for each hour over which the sample was obtained.

(6) For the purpose of adjusting pollutant concentrations to zero percent oxygen, the following equation shall be used:

$$C_{adj} = C_{meas}\,[20.9_c/(20.9 - \%O_2)]$$

where:

C_{adj} = pollutant concentration adjusted to zero percent oxygen, ppm or g/dscm

C_{meas} = pollutant concentration measured on a dry basis, ppm or g/dscm

20.9_c = 20.9 percent oxygen − 0.0 percent oxygen (defined oxygen correction basis), percent

20.9 = oxygen concentration in air, percent

$\%O_2$ = oxygen concentration measured on a dry basis, percent

(i) For the purpose of determining compliance with § 60.104(b)(2), the following reference methods and calculation procedures shall be used except as provided in paragraph (i)(12) of this section:

(1) One 3-hour test shall be performed each day.

(2) For gases released to the atmosphere from the fluid catalytic cracking unit catalyst regenerator:

(i) Method 8 as modified in § 60.106(i)(3) for moisture content and for the concentration of sulfur oxides calculated as sulfur dioxide,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 calculation procedures (data obtained from Methods 3 and 8) for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(3) Method 8 shall be modified by the insertion of a heated glass fiber filter between the probe and first impinger. The probe liner and glass fiber filter temperature shall be maintained above 160 °C (320 °F). The isopropanol impinger shall be eliminated. Sample recovery procedures described in Method 8 for container No. 1 shall be eliminated. The heated glass fiber filter also shall be excluded; however, rinsing of all connecting glassware after the heated glass fiber filter shall be retained and included in container No. 2. Sampled volume shall be at least 1 dscm.

(4) For Method 3, the integrated sampling technique shall be used.

(5) Sampling time for each run shall be at least 3 hours.

(6) All testing shall be performed at the same location. Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator-waste heat boiler in which auxiliary or supplemental gaseous, liquid, or solid fossil fuel is burned, testing shall be conducted at a point between the regenerator outlet and the incinerator-waste heat boiler. An alternative sampling location after the waste heat boiler may be used if alternative coke burn-off rate equations, and, if requested, auxiliary/supplemental fuel SO_X credits, have been submitted to and approved by the Administrator prior to sampling.

(7) Coke burn-off rate shall be determined using the procedures specified under paragraph (b)(3) of this section, unless paragraph (i)(6) of this section applies.

(8) Calculate the concentration of sulfur oxides as sulfur dioxide using equation 8–3 in Section 6.5 of Method 8 to calculate and report the total concentration of sulfur oxides as sulfur dioxide (Cso_x).

(9) Sulfur oxides emission rate calculated as sulfur dioxide shall be determined for each test run by the following equation:

$$E_{so_x} = C_{so_x} Q_{sd}/K$$

Where:

E_{SOx} = sulfur oxides emission rate calculated as sulfur dioxide, kg/hr (lb/hr)

C_{SOx} = sulfur oxides emission concentration calculated as sulfur dioxide, g/dscm (gr/dscf)

Q_{sd} = dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr)

K=1,000 g/kg (7,000 gr/lb)

(10) Sulfur oxides emissions calculated as sulfur dioxide shall be determined for each test run by the following equation:

$$R_{so_x} = \left(E_{so_x}/R_c\right)$$

Where:

R_{SOx} = Sulfur oxides emissions calculated as kg sulfur dioxide per Mg (lb/ton) coke burn-off.

E_{SOx} = Sulfur oxides emission rate calculated as sulfur dioxide, kg/hr (lb/hr).
R_c = Coke burn-off rate, Mg/hr (ton/hr).

(11) Calculate the 7-day average sulfur oxides emission rate as sulfur dioxide per Mg (ton) of coke burn-off by dividing the sum of the individual daily rates by the number of daily rates summed.

(12) An owner or operator may, upon approval by the Administrator, use an alternative method for determining compliance with § 60.104(b)(2), as provided in § 60.8(b). Any requests for approval must include data to demonstrate to the Administrator that the alternative method would produce results adequate for the determination of compliance.

(j) For the purpose of determining compliance with § 60.104(b)(3), the following analytical methods and calculation procedures shall be used:

(1) One fresh feed sample shall be collected once per 8-hour period.

(2) Fresh feed samples shall be analyzed separately by using any one of the following applicable analytical test methods: ASTM D129–64, 78, or 95, ASTM D1552–83 or 95, ASTM D2622–87, 94, or 98, or ASTM D1266–87, 91, or 98. (These methods are incorporated by reference: see § 60.17.) The applicable range of some of these ASTM methods is not adequate to measure the levels of sulfur in some fresh feed samples. Dilution of samples prior to analysis with verification of the dilution ratio is acceptable upon prior approval of the Administrator.

(3) If a fresh feed sample cannot be collected at a single location, then the fresh feed sulfur content shall be determined as follows:

(i) Individual samples shall be collected once per 8-hour period for each separate fresh feed stream charged directly into the riser or reactor of the fluid catalytic cracking unit. For each sample location the fresh feed volumetric flow rate at the time of collecting the fresh feed sample shall be measured and recorded. The same method for measuring volumetric flow rate shall be used at all locations.

(ii) Each fresh feed sample shall be analyzed separately using the methods specified under paragraph (j)(2) of this section.

(iii) Fresh feed sulfur content shall be calculated for each 8-hour period using the following equation:

$$S_f = \sum_{i=1}^{n} \frac{S_i Q_i}{Q_f}$$

where:

S_f = fresh feed sulfur content expressed in percent by weight of fresh feed.
n = number of separate fresh feed streams charged directly to the riser or reactor of the fluid catalytic cracking unit.
Q_f = total volumetric flow rate of fresh feed charged to the fluid catalytic cracking unit.
S_i = fresh feed sulfur content expressed in percent by weight of fresh feed for the ''ith'' sampling location.
Q_i = volumetric flow rate of fresh feed stream for the ''ith'' sampling location.

(4) Calculate a 7-day average (arithmetic mean) sulfur content of the fresh feed using all of the fresh feed sulfur content values obtained during seven successive 24-hour periods.

(k) The test methods used to supplement continuous monitoring system data to meet the minimum data requirements in § 60.104(d) will be used as described below or as otherwise approved by the Administrator.

(1) Methods 6, 6B, or 8 are used. The sampling location(s) are the same as those specified for the monitor.

(2) For Method 6, the minimum sampling time is 20 minutes and the minimum sampling volume is 0.02 dscm (0.71 dscf) for each sample. Samples are taken at approximately 60-minute intervals. Each sample represents a 1-hour average. A minimum of 18 valid samples is required to obtain one valid day of data.

(3) For Method 6B, collection of a sample representing a minimum of 18 hours is required to obtain one valid day of data.

(4) For Method 8, the procedures as outlined in this section are used. The equivalent of 16 hours of sampling is

required to obtain one valid day of data.

[39 FR 9315, Mar. 8, 1974, as amended at 43 FR 10869, Mar. 15, 1978; 51 FR 42842, Nov. 26, 1986; 52 FR 20392, June 1, 1987; 53 FR 41333, Oct. 21, 1988; 54 FR 34028, Aug. 17, 1989; 55 FR 40176, Oct. 2, 1990; 56 FR 4176, Feb. 4, 1991; 65 FR 61754, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006; 73 FR 35867, June 24, 2008; 77 FR 56463, Sep. 12, 2012]

§ 60.107 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.104(b) shall notify the Administrator of the specific provisions of § 60.104(b) with which the owner or operator seeks to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to comply with an alternative provision of § 60.104(b), then the Administrator shall be notified by the owner or operator in the report described in paragraph (c) of this section.

(b) Each owner or operator subject to § 60.104(b) shall record and maintain the following information:

(1) If subject to § 60.104(b)(1),

(i) All data and calibrations from continuous monitoring systems located at the inlet and outlet to the control device, including the results of the daily drift tests and quarterly accuracy assessments required under appendix F, Procedure 1;

(ii) Measurements obtained by supplemental sampling (refer to § 60.105(a)(13) and § 60.106(k)) for meeting minimum data requirements; and

(iii) The written procedures for the quality control program required by appendix F, Procedure 1.

(2) If subject to § 60.104(b)(2), measurements obtained in the daily Method 8 testing, or those obtained by alternative measurement methods, if § 60.106(i)(12) applies.

(3) If subject to § 60.104(b)(3), data obtained from the daily feed sulfur tests.

(4) Each 7-day rolling average compliance determination.

(c) Each owner or operator subject to § 60.104(b) shall submit a report except as provided by paragraph (d) of this section. The following information shall be contained in the report:

(1) Any 7-day period during which:

(i) The average percent reduction and average concentration of sulfur dioxide on a dry, O_2-free basis in the gases discharged to the atmosphere from any fluid cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104(b)(1) is below 90 percent and above 50 ppmv, as measured by the continuous monitoring system prescribed under § 60.105(a)(8), or above 50 ppmv, as measured by the outlet continuous monitoring system prescribed under § 60.105(a)(9). The average percent reduction and average sulfur dioxide concentration shall be determined using the procedures specified under § 60.106(h);

(ii) The average emission rate of sulfur dioxide in the gases discharged to the atmosphere from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104(b)(2) exceeds 9.8 kg SO_X per 1,000 kg coke burnoff, as measured by the daily testing prescribed under § 60.106(i). The average emission rate shall be determined using the procedures specified under § 60.106(i); and

(iii) The average sulfur content of the fresh feed for which the owner or operator seeks to comply with § 60.104(b)(3) exceeds 0.30 percent by weight. The fresh feed sulfur content, a 7-day rolling average, shall be determined using the procedures specified under § 60.106(j).

(2) Any 30-day period in which the minimum data requirements specified in § 60.104(d) are not obtained.

(3) For each 7-day period during which an exceedance has occurred as defined in paragraphs (c)(1)(i) through (c)(1)(iii) and (c)(2) of this section:

(i) The date that the exceedance occurred;

(ii) An explanation of the exceedance;

(iii) Whether the exceedance was concurrent with a startup, shutdown, or malfunction of the fluid catalytic cracking unit or control system; and

(iv) A description of the corrective action taken, if any.

(4) If subject to § 60.104(b)(1),

(i) The dates for which and brief explanations as to why fewer than 18 valid hours of data were obtained for

the inlet continuous monitoring system;

(ii) The dates for which and brief explanations as to why fewer than 18 valid hours of data were obtained for the outlet continuous monitoring system;

(iii) Identification of times when hourly averages have been obtained based on manual sampling methods;

(iv) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system; and

(v) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specifications 2 or 3.

(vi) Results of daily drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(5) If subject to § 60.104(b)(2), for each day in which a Method 8 sample result required by § 60.106(i) was not obtained, the date for which and brief explanation as to why a Method 8 sample result was not obtained, for approval by the Administrator.

(6) If subject to § 60.104(b)(3), for each 8-hour period in which a feed sulfur measurement required by § 60.106(j) was not obtained, the date for which and brief explanation as to why a feed sulfur measurement was not obtained, for approval by the Administrator.

(d) For any periods for which sulfur dioxide or oxides emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(e) For each fuel gas stream combusted in a fuel gas combustion device subject to § 60.104(a)(1), if an owner or operator determines that one of the exemptions listed in § 60.105(a)(4)(iv) applies to that fuel gas stream, the owner or operator shall maintain records of the specific exemption chosen for each fuel gas stream. If the owner or operator applies for the exemption described in § 60.105(a)(4)(iv)(D), the owner or operator must keep a copy of the application as well as the letter from the Administrator granting approval of the application.

(f) The owner or operator of an affected facility shall submit the reports required under this subpart to the Administrator semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

(g) The owner or operator of the affected facility shall submit a signed statement certifying the accuracy and completeness of the information contained in the report.

[54 FR 34029, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990; 64 FR 7465, Feb. 12, 1999; 65 FR 61755, Oct. 17, 2000; 73 FR 35867, June 24, 2008]

§ 60.108 Performance test and compliance provisions.

(a) Section 60.8(d) shall apply to the initial performance test specified under paragraph (c) of this section, but not to the daily performance tests required thereafter as specified in § 60.108(d). Section 60.8(f) does not apply when determining compliance with the standards specified under § 60.104(b). Performance tests conducted for the purpose of determining compliance under § 60.104(b) shall be conducted according to the applicable procedures specified under § 60.106.

(b) Owners or operators who seek to comply with § 60.104(b)(3) shall meet that standard at all times, including periods of startup, shutdown, and malfunctions.

(c) The initial performance test shall consist of the initial 7-day average calculated for compliance with § 60.104(b)(1), (b)(2), or (b)(3).

(d) After conducting the initial performance test prescribed under § 60.8, the owner or operator of a fluid catalytic cracking unit catalyst regenerator subject to § 60.104(b) shall conduct a performance test for each successive 24-hour period thereafter. The daily performance tests shall be conducted according to the appropriate

procedures specified under § 60.106. In the event that a sample collected under § 60.106(i) or (j) is accidentally lost or conditions occur in which one of the samples must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operators' control, compliance may be determined using available data for the 7-day period.

(e) Each owner or operator subject to § 60.104(b) who has demonstrated compliance with one of the provisions of § 60.104(b) but a later date seeks to comply with another of the provisions of § 60.104(b) shall begin conducting daily performance tests as specified under paragraph (d) of this section immediately upon electing to become subject to one of the other provisions of § 60.104(b). The owner or operator shall furnish the Administrator with a written notification of the change in the semiannual report required by § 60.107(f).

[54 FR 34030, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990; 64 FR 7466, Feb. 12, 1999; 73 FR 35867, June 24, 2008]

§ 60.109 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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 shall not be delegated to States:

(1) Section 60.105(a)(13)(iii),

(2) Section 60.106(i)(12).

[54 FR 34031, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990]

Subpart Ja—Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

SOURCE: 73 FR 35867, June 24, 2008, unless otherwise noted.

§ 60.100a Applicability, designation of affected facility, and reconstruction.

(a) The provisions of this subpart apply to the following affected facilities in petroleum refineries: fluid catalytic cracking units (FCCU), fluid coking units (FCU), delayed coking units, fuel gas combustion devices (including process heaters), flares and sulfur recovery plants. The sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery.

(b) Except for flares and delayed coking units, the provisions of this subpart apply only to affected facilities under paragraph (a) of this section which commence construction, modification or reconstruction after May 14, 2007. For flares, the provisions of this subpart apply only to flares which commence construction, modification or reconstruction after June 24, 2008. For the purposes of this subpart, a modification to a flare commences when a project that includes any of the activities in paragraphs (c)(1) or (2) of this section is commenced. For delayed coking units, the provisions of this subpart apply to delayed coking units that commence construction, reconstruction or modification on the earliest of the following dates:

(1) May 14, 2007, for such activities that involve a ''delayed coking unit'' defined as follows: one or more refinery process units in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is produced in a series of closed, batch system reactors;

(2) December 22, 2008, for such activities that involve a ''delayed coking unit'' defined as follows: a refinery process unit in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is produced in a series of closed, batch system reactors. A delayed coking unit consists of the coke drums and associated fractionator;

(3) September 12, 2012, for such activities that involve a ''delayed coking unit'' as defined in § 60.101a.

(c) For all affected facilities other than flares, the provisions in §60.14 regarding modification apply. As provided in §60.14(f), the special provisions set forth under this subpart shall supersede the provisions in §60.14 with respect to flares. For the purposes of this subpart, a modification to a flare occurs as provided in paragraphs (c)(1) or (2) of this section.

(1) Any new piping from a refinery process unit, including ancillary equipment, or a fuel gas system is physically connected to the flare (*e.g.*, for direct emergency relief or some form of continuous or intermittent venting). However, the connections described in paragraphs (c)(1)(i) through (vii) of this section are not considered modifications of a flare.

(i) Connections made to install monitoring systems to the flare.

(ii) Connections made to install a flare gas recovery system or connections made to upgrade or enhance components of a flare gas recovery system (*e.g.*, addition of compressors or recycle lines).

(iii) Connections made to replace or upgrade existing pressure relief or safety valves, provided the new pressure relief or safety valve has a set point opening pressure no lower and an internal diameter no greater than the existing equipment being replaced or upgraded.

(iv) Connections made for flare gas sulfur removal.

(v) Connections made to install back-up (redundant) equipment associated with the flare (such as a back-up compressor) that does not increase the capacity of the flare.

(vi) Replacing piping or moving an existing connection from a refinery process unit to a new location in the same flare, provided the new pipe diameter is less than or equal to the diameter of the pipe/connection being replaced/moved.

(vii) Connections that interconnect two or more flares.

(2) A flare is physically altered to increase the flow capacity of the flare.

(d) For purposes of this subpart, under §60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the relevant applicability date specified in paragraph (b) of this section.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56464, Sep. 12, 2012]

§60.101a Definitions.

Terms used in this subpart are defined in the Clean Air Act (CAA), in §60.2 and in this section.

Air preheat means a device used to heat the air supplied to a process heater generally by use of a heat exchanger to recover the sensible heat of exhaust gas from the process heater.

Ancillary equipment means equipment used in conjunction with or that serve a refinery process unit. *Ancillary equipment* includes, but is not limited to, storage tanks, product loading operations, wastewater treatment systems, steam- or electricity-producing units (including coke gasification units), pressure relief valves, pumps, sampling vents and continuous analyzer vents.

Cascaded flare system means a series of flares connected to one flare gas header system arranged with increasing pressure set points so that discharges will be initially directed to the first flare in the series (*i.e.*, the primary flare). If the discharge pressure exceeds a set point at which the flow to the primary flare would exceed the primary flare's capacity, flow will be diverted to the second flare in the series. Similarly, flow would be diverted to a third (or fourth) flare if the pressure in the flare gas header system exceeds a threshold where the flow to the first two (or three) flares would exceed their capacities.

Co-fired process heater means a process heater that employs burners that are designed to be supplied by both gaseous and liquid fuels on a routine basis. Process heaters that have gas burners with emergency oil back-up burners are not considered co-fired process heaters.

Coke burn-off means the coke removed from the surface of the FCCU catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in §60.104a.

Contact material means any substance formulated to remove metals, sulfur, nitrogen, or any other contaminant from petroleum derivatives.

Delayed coking unit means one or more refinery process units in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is produced in a series of closed, batch system reactors.

Corrective action means the design, operation and maintenance changes that one takes consistent with good engineering practice to reduce or eliminate the likelihood of the recurrence of the primary cause and any other contributing cause(s) of an event identified by a root cause analysis as having resulted in a discharge of gases to an affected flare in excess of specified thresholds.

Corrective action analysis means a description of all reasonable interim and long-term measures, if any, that are available, and an explanation of why the selected corrective action(s) is/are the best alternative(s), including, but not limited to, considerations of cost effectiveness, technical feasibility, safety and secondary impacts.

Delayed coking unit means a refinery process unit in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is produced in a series of closed, batch system reactors. A *delayed coking unit* includes, but is not limited to, all of the coke drums associated with a single fractionator; the fractionator, including the bottoms receiver and the overhead condenser; the coke drum cutting water and quench system, including the jet pump and coker quench water tank; process piping and associated equipment such as pumps, valves and connectors; and the coke drum blowdown recovery compressor system.

Emergency flare means a flare that combusts gas exclusively released as a result of malfunctions (and not startup, shutdown, routine operations or any other cause) on four or fewer occasions in a rolling 365-day period. For purposes of this rule, a flare cannot be categorized as an *emergency flare* unless it maintains a water seal.

Flare means a combustion device that uses an uncontrolled volume of air to burn gases. The *flare* includes the foundation, flare tip, structural support, burner, igniter, flare controls, including air injection or steam injection systems, flame arrestors and the flare gas header system. In the case of an interconnected flare gas header system, the *flare* includes each individual flare serviced by the interconnected flare gas header system and the interconnected flare gas header system.

Flare gas header system means all piping and knockout pots, including those in a subheader system, used to collect and transport gas to a flare either from a process unit or a pressure relief valve from the fuel gas system, regardless of whether or not a flare gas recovery system draws gas from the *flare gas header system*. The *flare gas header system* includes piping inside the battery limit of a process unit if the purpose of the piping is to transport gas to a flare or knockout pot that is part of the flare.

Flare gas recovery system means a system of one or more compressors, piping and the associated water seal, rupture disk or similar device used to divert gas from the flare and direct the gas to the fuel gas system or to a fuel gas combustion device.

Flexicoking unit means a refinery process unit in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is continuously produced and then gasified to produce a synthetic fuel gas.

Fluid catalytic cracking unit means a refinery process unit in which petroleum derivatives are continuously charged and hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery. When *fluid catalyst cracking unit* regenerator exhaust from two separate fluid catalytic cracking units share a common

exhaust treatment (e.g., CO boiler or wet scrubber), the *fluid catalytic cracking unit* is a single affected facility.

Fluid coking unit means a refinery process unit in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is continuously produced in a fluidized bed system. The *fluid coking unit* includes the coking reactor, the coking burner, and equipment for controlling air pollutant emissions and for heat recovery on the fluid coking burner exhaust vent.

Forced draft process heater means a process heater in which the combustion air is supplied under positive pressure produced by a fan at any location in the inlet air line prior to the point where the combustion air enters the process heater or air preheat. For the purposes of this subpart, a process heater that uses fans at both the inlet air side and the exhaust air side (*i.e.*, balanced draft system) is considered to be a *forced draft process heater*.

Fuel gas means any gas which is generated at a petroleum refinery and which is combusted. *Fuel gas* includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. *Fuel gas* does not include gases generated by catalytic cracking unit catalyst regenerators, coke calciners (used to make premium grade coke) and fluid coking burners, but does include gases from flexicoking unit gasifiers and other gasifiers. *Fuel gas* does not include vapors that are collected and combusted in a thermal oxidizer or flare installed to control emissions from wastewater treatment units other than those processing sour water, marine tank vessel loading operations or asphalt processing units (*i.e.*, asphalt blowing stills).

Fuel gas combustion device means any equipment, such as process heaters and boilers, used to combust fuel gas. For the purposes of this subpart, *fuel gas combustion device* does not include flares or facilities in which gases are combusted to produce sulfur or sulfuric acid.

Fuel gas system means a system of compressors, piping, knock-out pots, mix drums, and units used to remove sulfur contaminants from the fuel gas (e.g., amine scrubbers) that collects refinery fuel gas from one or more sources for treatment as necessary prior to combusting in process heaters or boilers. A *fuel gas system* may have an overpressure vent to a flare but the primary purpose for a fuel gas system is to provide fuel to the refinery.

Natural draft process heater means any process heater in which the combustion air is supplied under ambient or negative pressure without the use of an inlet air (forced draft) fan. For the purposes of this subpart, a *natural draft process heater* is any process heater that is not a forced draft process heater, including induced draft systems.

Non-emergency flare means any flare that is not an emergency flare as defined in this subpart.

Oxidation control system means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide (SO_2) and recycling the SO_2 to the reactor furnace or the first-stage catalytic reactor of the Claus sulfur recovery plant or converting the SO_2 to a sulfur product.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt (bitumen) or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives. A facility that produces only oil shale or tar sands-derived crude oil for further processing at a petroleum refinery using only solvent extraction and/or distillation to recover diluent is not a *petroleum refinery*.

Primary flare means the first flare in a cascaded flare system.

Process heater means an enclosed combustion device used to transfer heat indirectly to process stream materials (liquids, gases, or solids) or to a heat transfer material for use in a process unit instead of steam.

Process upset gas means any gas generated by a petroleum refinery process unit or by ancillary equipment as a result of startup, shutdown, upset or malfunction.

Purge gas means gas introduced between a flare's water seal and a flare's tip to prevent oxygen infiltration (backflow) into the flare tip. For flares with no water seals, the function of *purge gas* is performed by sweep gas (*i.e.*, flares without water seals do not use *purge gas*).

Reduced sulfur compounds means hydrogen sulfide (H_2S), carbonyl sulfide, and carbon disulfide.

Reduction control system means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to H_2S and either recycling the H_2S to the reactor furnace or the first-stage catalytic reactor of the Claus sulfur recovery plant or converting the H_2S to a sulfur product.

Refinery process unit means any segment of the petroleum refinery in which a specific processing operation is conducted.

Root cause analysis means an assessment conducted through a process of investigation to determine the primary cause, and any other contributing cause(s), of a discharge of gases in excess of specified thresholds.

Secondary flare means a flare in a cascaded flare system that provides additional flare capacity and pressure relief to a flare gas system when the flare gas flow exceeds the capacity of the primary flare. For purposes of this subpart, a *secondary flare* is characterized by infrequent use and must maintain a water seal.

Sulfur pit means the storage vessel in which sulfur that is condensed after each Claus catalytic reactor is initially accumulated and stored. *A sulfur pit* does not include secondary sulfur storage vessels downstream of the initial Claus reactor sulfur pits.

Sulfur recovery plant means all process units which recover sulfur from H_2S and/or SO_2 from a common source of sour gas produced at a petroleum refinery. The *sulfur recovery plant* also includes sulfur pits used to store the recovered sulfur product, but it does not include secondary sulfur storage vessels or loading facilities downstream of the sulfur pits. For example, a Claus sulfur recovery plant includes: Reactor furnace and waste heat boiler, catalytic reactors, sulfur pits and, if present, oxidation or reduction control systems or incinerator, thermal oxidizer or similar combustion device. Multiple sulfur recovery units are a single affected facility only when the units share the same source of sour gas. *Sulfur recovery plants* that receive source gas from completely segregated sour gas treatment systems are separate affected facilities.

Sweep gas means the gas introduced in a flare gas header system to maintain a constant flow of gas to prevent oxygen buildup in the flare header. For flares with no water seals, *sweep gas* also performs the function of preventing oxygen infiltration (backflow) into the flare tip.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56464, Sep. 12, 2012]

§ 60.102a Emissions limitations.

(a) Each owner or operator that is subject to the requirements of this subpart shall comply with the emissions limitations in paragraphs (b) through (i) of this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever comes first.

(b) An owner or operator subject to the provisions of this subpart shall not discharge or cause the discharge into the atmosphere from any FCCU or FCU:

(1) Particulate matter (PM) in excess of the limits in paragraphs (b)(1)(i), (ii), or (iii) of this section.

(i) 1.0 kilogram per Megagram (kg/Mg)(1 pound (lb) per 1,000 lb) coke burn-off or, if a PM continuous emission monitoring system (CEMS) is used, 0.040 grain per dry standard cubic feet (gr/dscf) corrected to 0 percent excess air for each modified or reconstructed FCCU.

(ii) 0.5 gram per kilogram (g/kg) coke burn-off (0.5 lb PM/1,000 lb coke burn-off) or, if a PM CEMS is used, 0.020 gr/dscf corrected to 0 percent excess air for each newly constructed FCCU.

(iii) 1.0 kg/Mg (1 lb/1,000 lb) coke burn-off; or if a PM CEMS is used, 0.040 grain per dry standard cubic feet (gr/

dscf) corrected to 0 percent excess air for each affected FCU.

(2) Nitrogen oxides (NO_X) in excess of 80 parts per million by volume (ppmv), dry basis corrected to 0 percent excess air, on a 7-day rolling average basis.

(3) Sulfur dioxide (SO_2) in excess of 50 ppmv dry basis corrected to 0 percent excess air, on a 7-day rolling average basis and 25 ppmv, dry basis corrected to 0 percent excess air, on a 365-day rolling average basis.

(4) Carbon monoxide (CO) in excess of 500 ppmv, dry basis corrected to 0 percent excess air, on an hourly average basis.

(c) The owner or operator of a FCCU or FCU that uses a continuous parameter monitoring system (CPMS) according to §60.105a(b)(1) shall comply with the applicable control device parameter operating limit in paragraph (c)(1) or (2) of this section.

(1) If the FCCU or FCU is controlled using an electrostatic precipitator:

(i) The 3-hour rolling average total power and secondary current to the entire system must not fall below the level established during the most recent performance test; and

(ii) The daily average exhaust coke burn-off rate must not exceed the level established during the most recent performance test.

(2) If the FCCU or FCU is controlled using a wet scrubber:

(i) The 3-hour rolling average pressure drop must not fall below the level established during the most recent performance test; and

(ii) The 3-hour rolling average liquid-to-gas ratio must not fall below the level established during the most recent performance test.

(d) If an FCCU or FCU uses a continuous opacity monitoring system (COMS) according to the alternative monitoring option in §60.105a(e), the 3-hour rolling average opacity of emissions from the FCCU or FCU as measured by the COMS must not exceed the site-specific opacity limit established during the most recent performance test.

(e) The owner or operator of a FCCU or FCU that is exempted from the requirement for a CO continuous emissions monitoring system under §60.105a(h)(3) shall comply with the parameter operating limits in paragraph (e)(1) or (2) of this section.

(1) For a FCCU or FCU with no post-combustion control device:

(i) The hourly average temperature of the exhaust gases exiting the FCCU or FCU must not fall below the level established during the most recent performance test.

(ii) The hourly average oxygen (O_2) concentration of the exhaust gases exiting the FCCU or FCU must not fall below the level established during the most recent performance test.

(2) For a FCCU or FCU with a post-combustion control device:

(i) The hourly average temperature of the exhaust gas vent stream exiting the control device must not fall below the level established during the most recent performance test.

(ii) The hourly average O_2 concentration of the exhaust gas vent stream exiting the control device must not fall below the level established during the most recent performance test.

(f) Except as provided in paragraph (f)(3), each owner or operator of an affected sulfur recovery plant shall comply with the applicable emission limits in paragraphs (f)(1) or (2) of this section.

(1) For a sulfur recovery plant with a capacity greater than 20 long tons per day (LTD):

(i) For a sulfur recovery plant with an oxidation control system or a reduction control system followed by incineration, the owner or operator shall not discharge or cause the discharge of any gases into the atmosphere in excess of 250 ppm by volume (dry basis) of sulfur dioxide (SO_2) at zero percent excess air. If the sulfur recovery plant consists of multiple process trains or release points the owner or operator shall comply with the 250 ppmv limit for each process train or release point or comply with a flow rate weighted average of 250 ppmv for all release points from the sulfur recovery plant; or

(ii) For a sulfur recovery plant with a reduction control system not followed by incineration, the owner or operator shall not discharge or cause the discharge of any gases into the atmosphere in excess of 300 ppmv of reduced sulfur compounds and 10 ppmv of H_2S,

each calculated as ppmv SO_2 (dry basis) at 0-percent excess air; or

(iii) For systems using oxygen enrichment, the owner or operator shall calculate the applicable emission limit using Equation 1 of this section:

$$E_{LS} = k_1 \times \left(-0.038 * \left(\%O_2\right)^2 + 11.53 * \%O_2 + 25.6\right) \qquad \text{(Eq. 1)}$$

Where:

E_{LS} = Emission rate of SO_2 for large sulfur recovery plant, ppmv;

k_1 = Constant factor for emission limit conversion: k_1 = 1 for converting to SO_2 limit and k_1 = 1.2 for converting to the reduced sulfur compounds limit; and

$\%O_2$ = O_2 concentration to the SRP, percent by volume (dry basis).

(2) For a sulfur recovery plant with a capacity of 20 LTD or less:

(i) For a sulfur recovery plant with an oxidation control system or a reduction control system followed by incineration, the owner or operator shall not discharge or cause the discharge of any gases into the atmosphere in excess of 2,500 ppm by volume (dry basis) of SO_2 at zero percent excess air. If the sulfur recovery plant consists of multiple process trains or release points the owner or operator shall comply with the 2,500 ppmv limit for each process train or release point or comply with a flow rate weighted average of 2,500 ppmv for all release points from the sulfur recovery plant; or

(ii) For sulfur recovery plant with a reduction control system not followed by incineration, the owner or operator shall not discharge or cause the discharge of any gases into the atmosphere in excess of 3,000 ppm by volume of reduced sulfur compounds and 100 ppm by volume of hydrogen sulfide (H_2S), each calculated as ppm SO_2 by volume (dry basis) at zero percent excess air; or

(iii) For systems using oxygen enrichment, the owner or operator shall calculate the applicable emission limit using Equation 2 of this section:

$$E_{SS} = k_1 \times (-0.38 * \left(\%O_2\right)^2 + 115.3 * \%O_2 + 256 \qquad \text{(Eq. 2)}$$

Where:

E_{SS} = Emission rate of SO_2 for small sulfur recovery plant, ppmv.

(3) Periods of maintenance of the sulfur pit, during which the emission limits in paragraphs (f)(1) and (2) shall not apply, shall not exceed 240 hours per year. The owner or operator must document the time periods during which the sulfur pit vents were not controlled and measures taken to minimize emissions during these periods. Examples of these measures include not adding fresh sulfur or shutting off vent fans.

(g) Each owner or operator of an affected fuel gas combustion device shall comply with the emissions limits in paragraphs (g)(1) and (2) of this section.

(1) Except as provided in (g)(1)(iii) of this section, for each fuel gas combustion device, the owner or operator shall comply with either the emission limit in paragraph (g)(1)(i) of this section or the fuel gas concentration limit in paragraph (g)(1)(ii) of this section.

(i) The owner or operator shall not discharge or cause the discharge of any gases into the atmosphere that contain SO_2 in excess of 20 ppmv (dry basis, corrected to 0-percent excess air) determined hourly on a 3-hour rolling average basis and SO_2 in excess of 8 ppmv (dry basis, corrected to 0-percent excess air), determined daily on a 365 successive calendar day rolling average basis; or

(ii) The owner or operator shall not burn in any fuel gas combustion device

any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H_2S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis.

(iii) The combustion in a portable generator of fuel gas released as a result of tank degassing and/or cleaning is exempt from the emissions limits in paragraphs (g)(1)(i) and (ii) of this section.

(2) For each process heater with a rated capacity of greater than 40 million British thermal units per hour (MMBtu/hr) on a higher heating value basis, the owner or operator shall not discharge to the atmosphere any emissions of NO_X in excess of the applicable limits in paragraphs (g)(2)(i) through (iv) of this section.

(i) For each natural draft process heater, comply with the limit in either paragraph (g)(2)(i)(A) or (B) of this section. The owner or operator may comply with either limit at any time, provided that the appropriate parameters for each alternative are monitored as specified in §60.107a; if fuel gas composition is not monitored as specified in §60.107a(d), the owner or operator must comply with the concentration limits in paragraph (g)(2)(i)(A) of this section.

(A) 40 ppmv (dry basis, corrected to 0-percent excess air) determined daily on a 30-day rolling average basis; or

(B) 0.040 pounds per million British thermal units (lb/MMBtu) higher heating value basis determined daily on a 30-day rolling average basis.

(ii) For each forced draft process heater, comply with the limit in either paragraph (g)(2)(ii)(A) or (B) of this section. The owner or operator may comply with either limit at any time, provided that the appropriate parameters for each alternative are monitored as specified in §60.107a; if fuel gas composition is not monitored as specified in §60.107a(d), the owner or operator must comply with the concentration limits in paragraph (g)(2)(ii)(A) of this section.

(A) 60 ppmv (dry basis, corrected to 0-percent excess air) determined daily on a 30-day rolling average basis; or

(B) 0.060 lb/MMBtu higher heating value basis determined daily on a 30-day rolling average basis.

(iii) For each co-fired natural draft process heater, comply with the limit in either paragraph (g)(2)(iii)(A) or (B) of this section. The owner or operator must choose one of the emissions limits with which to comply at all times:

(A) 150 ppmv (dry basis, corrected to 0-percent excess air) determined daily on a 30 successive operating day rolling average basis; or

(B) The daily average emissions limit calculated using Equation 3 of this section:

$$ER_{NOx} = \frac{0.06\,Q_{gas}\,HHV_{gas} + 0.35\,Q_{oil}\,HHV_{oil}}{Q_{gas}\,HHV_{gas} + Q_{oil}\,HHV_{oil}} \qquad \text{(Eq. 3)}$$

Where:

ER_{NOx} = Daily allowable average emission rate of NO_X, lb/MMBtu (higher heating value basis);

Q_{gas} = Daily average volumetric flow rate of fuel gas, standard cubic feet per day (scf/day);

Q_{oil} = Daily average volumetric flow rate of fuel oil, scf/day;

HHV_{gas} = Daily average higher heating value of gas fired to the process heater, MMBtu/scf; and

HHV_{oil} = Daily average higher heating value of fuel oil fired to the process heater, MMBtu/scf.

(iv) For each co-fired forced draft process heater, comply with the limit in either paragraph (g)(2)(iv)(A) or (B) of this section. The owner or operator must choose one of the emissions limits with which to comply at all times:

(A) 150 ppmv (dry basis, corrected to 0-percent excess air) determined daily on a 30 successive operating day rolling average basis; or

(B) The daily average emissions limit calculated using Equation 4 of this section:

$$ER_{NOx} = \frac{0.11 Q_{gas} HHV_{gas} + 0.40 Q_{oil} HHV_{oil}}{Q_{gas} HHV_{gas} + Q_{oil} HHV_{oil}} \quad \text{(Eq. 4)}$$

Where:

ER_{NOx} = Daily allowable average emission rate of NO_X, lb/MMBtu (higher heating value basis);

Q_{gas} = Daily average volumetric flow rate of fuel gas, scf/day;

Q_{oil} = Daily average volumetric flow rate of fuel oil, scf/day;

HHV_{gas} = Daily average higher heating value of gas fired to the process heater, MMBtu/scf; and

HHV_{oil} = Daily average higher heating value of fuel oil fired to the process heater, MMBtu/scf.

(h) [Reserved]

(i) For a process heater that meets any of the criteria of paragraphs (i)(1)(i) through (iv) of this section, an owner or operator may request approval from the Administrator for a NO_X emissions limit which shall apply specifically to that affected facility. The request shall include information as described in paragraph (i)(2) of this section. The request shall be submitted and followed as described in paragraph (i)(3) of this section.

(1) A process heater that meets one of the criteria in paragraphs (i)(1)(i) through (iv) of this section may apply for a site-specific NO_X emissions limit:

(i) A modified or reconstructed process heater that lacks sufficient space to accommodate installation and proper operation of combustion modification-based technology (*e.g.*, ultra-low NO_X burners); or

(ii) A modified or reconstructed process heater that has downwardly firing induced draft burners; or

(iii) A co-fired process heater; or

(iv) A process heater operating at reduced firing conditions for an extended period of time (*i.e.*, operating in turndown mode). The site-specific NO_X emissions limit will only apply for those operating conditions.

(2) The request shall include sufficient and appropriate data, as determined by the Administrator, to allow the Administrator to confirm that the process heater is unable to comply with the applicable NO_X emissions limit in paragraph (g)(2) of this section. At a minimum, the request shall contain the information described in paragraphs (i)(2)(i) through (iv) of this section.

(i) The design and dimensions of the process heater, evaluation of available combustion modification-based technology, description of fuel gas and, if applicable, fuel oil characteristics, information regarding the combustion conditions (temperature, oxygen content, firing rates) and other information needed to demonstrate that the process heater meets one of the four classes of process heaters listed in paragraph (i)(1) of this section.

(ii) An explanation of how the data in paragraph (i)(2)(i) demonstrate that ultra-low NO_X burners, flue gas recirculation, control of excess air or other combustion modification-based technology (including combinations of these combustion modification-based technologies) cannot be used to meet the applicable emissions limit in paragraph (g)(2) of this section.

(iii) Results of a performance test conducted under representative conditions using the applicable methods specified in § 60.104a(i) to demonstrate the performance of the technology the owner or operator will use to minimize NO_X emissions.

(iv) The means by which the owner or operator will document continuous compliance with the site-specific emissions limit.

(3) The request shall be submitted and followed as described in paragraphs (i)(3)(i) through (iii) of this section.

(i) The owner or operator of a process heater that meets one of the criteria in paragraphs (i)(1)(i) through (iv) of this section may request approval from the Administrator within 180 days after initial startup of the process heater for a NO_X emissions limit which shall apply specifically to that affected facility.

(ii) The request must be submitted to the Administrator for approval. The owner or operator must comply with

the request as submitted until it is approved.

(iii) The request shall also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143–01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to *refinerynsps@epa.gov*.

(4) The approval process for a request for a facility-specific NO_X emissions limit is described in paragraphs (i)(4)(i) through (iii) of this section.

(i) Approval by the Administrator of a facility-specific NO_X emissions limit request will be based on the completeness, accuracy and reasonableness of the request. Factors that the EPA will consider in reviewing the request for approval include, but are not limited to, the following:

(A) A demonstration that the process heater meets one of the four classes of process heaters outlined in paragraphs (i)(1) of this section;

(B) A description of the low-NO_X burner designs and other combustion modifications considered for reducing NO_X emissions;

(C) The combustion modification option selected; and

(D) The operating conditions (firing rate, heater box temperature and excess oxygen concentration) at which the NO_X emission level was established.

(ii) If the request is approved by the Administrator, a facility-specific NO_X emissions limit will be established at the NO_X emission level demonstrated in the approved request.

(iii) If the Administrator finds any deficiencies in the request, the request must be revised to address the deficiencies and be re-submitted for approval.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56466, Sep. 12, 2012]

§60.103a Design, equipment, work practice or operational standards.

(a) Except as provided in paragraph (g) of this section, each owner or operator that operates a flare that is subject to this subpart shall develop and implement a written flare management plan no later than the date specified in paragraph (b) of this section. The flare management plan must include the information described in paragraphs (a)(1) through (7) of this section.

(1) A listing of all refinery process units, ancillary equipment, and fuel gas systems connected to the flare for each affected flare.

(2) An assessment of whether discharges to affected flares from these process units, ancillary equipment and fuel gas systems can be minimized. The flare minimization assessment must (at a minimum) consider the items in paragraphs (a)(2)(i) through (iv) of this section. The assessment must provide clear rationale in terms of costs (capital and annual operating), natural gas offset credits (if applicable), technical feasibility, secondary environmental impacts and safety considerations for the selected minimization alternative(s) or a statement, with justifications, that flow reduction could not be achieved. Based upon the assessment, each owner or operator of an affected flare shall identify the minimization alternatives that it has implemented by the due date of the flare management plan and shall include a schedule for the prompt implementation of any selected measures that cannot reasonably be completed as of that date.

(i) Elimination of process gas discharge to the flare through process operating changes or gas recovery at the source.

(ii) Reduction of the volume of process gas to the flare through process operating changes.

(iii) Installation of a flare gas recovery system or, for facilities that are fuel gas rich, a flare gas recovery system and a co-generation unit or combined heat and power unit.

(iv) Minimization of sweep gas flow rates and, for flares with water seals, purge gas flow rates.

(3) A description of each affected flare containing the information in paragraphs (a)(3)(i) through (vii) of this section.

(i) A general description of the flare, including the information in paragraphs (a)(3)(i)(A) through (G) of this section.

(A) Whether it is a ground flare or elevated (including height).

(B) The type of assist system (*e.g.*, air, steam, pressure, non-assisted).

(C) Whether it is simple or complex flare tip (*e.g.*, staged, sequential).

(D) Whether the flare is part of a cascaded flare system (and if so, whether the flare is primary or secondary).

(E) Whether the flare serves as a backup to another flare.

(F) Whether the flare is an emergency flare or a non-emergency flare.

(G) Whether the flare is equipped with a flare gas recovery system.

(ii) Description and simple process flow diagram showing the interconnection of the following components of the flare: flare tip (date installed, manufacturer, nominal and effective tip diameter, tip drawing); knockout or surge drum(s) or pot(s) (including dimensions and design capacities); flare header(s) and subheader(s); assist system; and ignition system.

(iii) Flare design parameters, including the maximum vent gas flow rate; minimum sweep gas flow rate; minimum purge gas flow rate (if any); maximum supplemental gas flow rate; maximum pilot gas flow rate; and, if the flare is steam-assisted, minimum total steam rate.

(iv) Description and simple process flow diagram showing all gas lines (including flare, purge (if applicable), sweep, supplemental and pilot gas) that are associated with the flare. For purge, sweep, supplemental and pilot gas, identify the type of gas used. Designate which lines are exempt from sulfur, H_2S or flow monitoring and why (*e.g.*, natural gas, inherently low sulfur, pilot gas). Designate which lines are monitored and identify on the process flow diagram the location and type of each monitor.

(v) For each flow rate, H_2S, sulfur content, pressure or water seal monitor identified in paragraph (a)(3)(iv) of this section, provide a detailed description of the manufacturer's specifications, including, but not limited to, make, model, type, range, precision, accuracy, calibration, maintenance and quality assurance procedures.

(vi) For emergency flares, secondary flares and flares equipped with a flare gas recovery system designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction:

(A) Description of the water seal, including the operating range for the liquid level.

(B) Designation of the monitoring option elected (flow and sulfur monitoring or pressure and water seal liquid level monitoring).

(vii) For flares equipped with a flare gas recovery system:

(A) A description of the flare gas recovery system, including number of compressors and capacity of each compressor.

(B) A description of the monitoring parameters used to quantify the amount of flare gas recovered.

(C) For systems with staged compressors, the maximum time period required to begin gas recovery with the secondary compressor(s), the monitoring parameters and procedures used to minimize the duration of releases during compressor staging and a justification for why the maximum time period cannot be further reduced.

(4) An evaluation of the baseline flow to the flare. The baseline flow to the flare must be determined after implementing the minimization assessment in paragraph (a)(2) of this section. Baseline flows do not include pilot gas flow or purge gas flow (*i.e.*, gas introduced after the flare's water seal) provided these gas flows remain reasonably constant (*i.e.*, separate flow monitors for these streams are not required). Separate baseline flow rates may be established for different operating conditions provided that the management plan includes:

(i) A primary baseline flow rate that will be used as the default baseline for all conditions except those specifically delineated in the plan;

(ii) A description of each special condition for which an alternate baseline is established, including the rationale for each alternate baseline, the daily flow for each alternate baseline and the expected duration of the special conditions for each alternate baseline; and

(iii) Procedures to minimize discharges to the affected flare during each special condition described in paragraph (a)(4)(ii) of this section, unless procedures are already developed for these cases under paragraph (a)(5)

through (7) of this section, as applicable.

(5) Procedures to minimize or eliminate discharges to the flare during the planned startup and shutdown of the refinery process units and ancillary equipment that are connected to the affected flare, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(6) Procedures to reduce flaring in cases of fuel gas imbalance (*i.e.*, excess fuel gas for the refinery's energy needs), together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(7) For flares equipped with flare gas recovery systems, procedures to minimize the frequency and duration of outages of the flare gas recovery system and procedures to minimize the volume of gas flared during such outages, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(b) Except as provided in paragraph (g) of this section, each owner or operator required to develop and implement a written flare management plan as described in paragraph (a) of this section must submit the plan to the Administrator as described in paragraphs (b)(1) through (3) of this section.

(1) The owner or operator of a newly constructed or reconstructed flare must develop and implement the flare management plan by no later than the date that the flare becomes an affected facility subject to this subpart, except for the selected minimization alternatives in paragraph (a)(2) and/or the procedures in paragraphs (a)(5) though (a)(7) of this section that cannot reasonably be implemented by that date, which the owner or operator must implement in accordance with the schedule in the flare management plan. The owner or operator of a modified flare must develop and implement the flare management plan by no later than November 11, 2015 or upon startup of the modified flare, whichever is later.

(2) The owner or operator must comply with the plan as submitted by the date specified in paragraph (b)(1) of this section. The plan should be updated periodically to account for changes in the operation of the flare, such as new connections to the flare or the installation of a flare gas recovery system, but the plan need be re-submitted to the Administrator only if the owner or operator adds an alternative baseline flow rate, revises an existing baseline as described in paragraph (a)(4) of this section, installs a flare gas recovery system or is required to change flare designations and monitoring methods as described in §60.107a(g). The owner or operator must comply with the updated plan as submitted.

(3) All versions of the plan submitted to the Administrator shall also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143–01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to *refinerynsps@epa.gov*.

(c) Except as provided in paragraphs (f) and (g) of this section, each owner or operator that operates a fuel gas combustion device, flare or sulfur recovery plant subject to this subpart shall conduct a root cause analysis and a corrective action analysis for each of the conditions specified in paragraphs (c)(1) through (3) of this section.

(1) For a flare:

(i) Any time the SO_2 emissions exceed 227 kilograms (kg) (500 lb) in any 24-hour period; or

(ii) Any discharge to the flare in excess of 14,160 standard cubic meters (m^3) (500,000 standard cubic feet (scf)) above the baseline, determined in paragraph (a)(4) of this section, in any 24-hour period; or

(iii) If the monitoring alternative in §60.107a(g) is elected, any period when the flare gas line pressure exceeds the water seal liquid depth, except for periods attributable to compressor staging that do not exceed the staging time specified in paragraph (a)(3)(vii)(C) of this section.

(2) For a fuel gas combustion device, each exceedance of an applicable short-term emissions limit in § 60.102a(g)(1) if the SO_2 discharge to the atmosphere is 227 kg (500 lb) greater than the amount that would have been emitted if the emissions limits had been met during one or more consecutive periods of excess emissions or any 24-hour period, whichever is shorter.

(3) For a sulfur recovery plant, each time the SO_2 emissions are more than 227 kg (500 lb) greater than the amount that would have been emitted if the SO_2 or reduced sulfur concentration was equal to the applicable emissions limit in § 60.102a(f)(1) or (2) during one or more consecutive periods of excess emissions or any 24-hour period, whichever is shorter.

(d) Except as provided in paragraphs (f) and (g) of this section, a root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified in paragraphs (c)(1) through (3) of this section. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (d)(1) through (5) of this section.

(1) If a single continuous discharge meets any of the conditions specified in paragraphs (c)(1) through (3) of this section for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.

(2) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions specified in paragraphs (c)(1)(i) through (iii) of this section, a single root cause analysis and corrective action analysis may be conducted.

(3) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in paragraph (a)(5) of this section were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in § 60.108a(c)(6) and reported as described in § 60.108a(d)(5).

(4) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in paragraphs (c)(1)(i) through (iii) of this section in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted.

(5) Except as provided in paragraph (d)(4) of this section, if discharges occur that meet any of the conditions specified in paragraphs (c)(1) through (3) of this section for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(e) Except as provided in paragraphs (f) and (g) of this section, each owner or operator of a fuel gas combustion device, flare or sulfur recovery plant subject to this subpart shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to paragraph (d) of this section in accordance with the applicable requirements in paragraphs (e)(1) through (3) of this section.

(1) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that corrective action should not be conducted, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in § 60.108a(c)(6)(ix).

(2) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(3) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the owner or operator shall

record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in §60.108a(c)(6)(x).

(f) Modified flares shall comply with the requirements of paragraphs (c) through (e) of this section by November 11, 2015 or at startup of the modified flare, whichever is later. Modified flares that were not affected facilities subject to subpart J of this part prior to becoming affected facilities under §60.100a shall comply with the requirements of paragraph (h) of this section and the requirements of §60.107a(a)(2) by November 11, 2015 or at startup of the modified flare, whichever is later. Modified flares that were affected facilities subject to subpart J of this part prior to becoming affected facilities under §60.100a shall comply with the requirements of paragraph (h) of this section and the requirements of §60.107a(a)(2) by November 13, 2012 or at startup of the modified flare, whichever is later, except that modified flares that have accepted applicability of subpart J under a federal consent decree shall comply with the subpart J requirements as specified in the consent decree, but shall comply with the requirements of paragraph (h) of this section and the requirements of §60.107a(a)(2) by no later than November 11, 2015.

(g) An affected flare subject to this subpart located in the Bay Area Air Quality Management District (BAAQMD) may elect to comply with both BAAQMD Regulation 12, Rule 11 and BAAQMD Regulation 12, Rule 12 as an alternative to complying with the requirements of paragraphs (a) through (e) of this section. An affected flare subject to this subpart located in the South Coast Air Quality Management District (SCAQMD) may elect to comply with SCAQMD Rule 1118 as an alternative to complying with the requirements of paragraphs (a) through (e) of this section. The owner or operator of an affected flare must notify the Administrator that the flare is in compliance with BAAQMD Regulation 12, Rule 11 and BAAQMD Regulation 12, Rule 12 or SCAQMD Rule 1118. The owner or operator of an affected flare shall also submit the existing flare management plan to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143–01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to *refinerynsps@epa.gov*.

(h) Each owner or operator shall not burn in any affected flare any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit.

(i) Each owner or operator of a delayed coking unit shall depressure each coke drum to 5 lb per square inch gauge (psig) or less prior to discharging the coke drum steam exhaust to the atmosphere. Until the coke drum pressure reaches 5 psig, the coke drum steam exhaust must be managed in an enclosed blowdown system and the uncondensed vapor must either be recovered (*e.g.*, sent to the delayed coking unit fractionators) or vented to the fuel gas system, a fuel gas combustion device or a flare.

(j) *Alternative means of emission limitation.* (1) Each owner or operator subject to the provisions of this section may apply to the Administrator for a determination of equivalence for any means of emission limitation that achieves a reduction in emissions of a specified pollutant at least equivalent to the reduction in emissions of that pollutant achieved by the controls required in this section.

(2) Determination of equivalence to the design, equipment, work practice or operational requirements of this section will be evaluated by the following guidelines:

(i) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate the equivalence of the alternative means of emission limitation.

(ii) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the design, equipment, work practice or operational requirements shall be demonstrated.

(iii) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the alternative means of emission limitation shall be demonstrated.

(iv) Each owner or operator applying for a determination of equivalence to a work practice standard shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(v) The Administrator will compare the demonstrated emission reduction for the alternative means of emission limitation to the demonstrated emission reduction for the design, equipment, work practice or operational requirements and, if applicable, will consider the commitment in paragraph (j)(2)(iv) of this section.

(vi) The Administrator may condition the approval of the alternative means of emission limitation on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as the design, equipment, work practice or operational requirements.

(3) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(4) Approval of the application for equivalence to the design, equipment, work practice or operational requirements of this section will be evaluated by the following guidelines:

(i) After a request for determination of equivalence is received, the Administrator will publish a notice in the FEDERAL REGISTER and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(ii) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the FEDERAL REGISTER.

(iii) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design or operational standard within the meaning of section 111(h)(1) of the CAA.

(5) Manufacturers of equipment used to control emissions may apply to the Administrator for determination of equivalence for any alternative means of emission limitation that achieves a reduction in emissions achieved by the equipment, design and operational requirements of this section. The Administrator will make an equivalence determination according to the provisions of paragraphs (j)(2) through (4) of this section.

[77 FR 56467, Sep. 12, 2012]

§ 60.104a Performance tests.

(a) The owner or operator shall conduct a performance test for each FCCU, FCU, sulfur recovery plant, flare and fuel gas combustion device to demonstrate initial compliance with each applicable emissions limit in § 60.102a according to the requirements of § 60.8. The notification requirements of § 60.8(d) apply to the initial performance test and to subsequent performance tests required by paragraph (b) of this section (or as required by the Administrator), but does not apply to performance tests conducted for the purpose of obtaining supplemental data because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments.

(b) The owner or operator of a FCCU or FCU that elects to monitor control device operating parameters according to the requirements in § 60.105a(b), to use bag leak detectors according to the requirements in § 60.105a(c), or to use COMS according to the requirements in § 60.105a(e) shall conduct a PM performance test at least once every 12 months and furnish the Administrator a written report of the results of each test.

(c) In conducting the performance tests required by this subpart (or as requested by the Administrator), the owner or operator shall use the test methods in 40 CFR part 60, Appendices A–1 through A–8 or other methods as specified in this section, except as provided in § 60.8(b).

(d) The owner or operator shall determine compliance with the PM, NO_X, SO_2, and CO emissions limits in § 60.102a(b) for FCCU and FCU using the following methods and procedures:

(1) Method 1 of appendix A–1 to part 60 for sample and velocity traverses.

(2) Method 2 of appendix A–1 to part 60 for velocity and volumetric flow rate.

(3) Method 3, 3A, or 3B of appendix A–2 to part 60 for gas analysis. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(4) Method 5, 5B, or 5F of appendix A–3 to part 60 for determining PM emissions and associated moisture content from a FCCU or FCU without a wet scrubber subject to the emissions limit in § 63.102a(b)(1). Use Method 5 or 5B of appendix A–3 to part 60 for determining PM emissions and associated moisture content from a FCCU or FCU with a wet scrubber subject to the emissions limit in § 63.102a(b)(1).

(i) The PM performance test consists of 3 valid test runs; the duration of each test run must be no less than 60 minutes.

(ii) The emissions rate of PM (E_{PM}) is computed for each run using Equation 5 of this section:

$$E = \frac{c_s Q_{sd}}{K R_c} \qquad \text{(Eq. 5)}$$

Where:

E = Emission rate of PM, g/kg (lb/1,000 lb) of coke burn-off;

c_s = Concentration of total PM, grams per dry standard cubic meter (g/dscm) (gr/dscf);

Q_{sd} = Volumetric flow rate of effluent gas, dry standard cubic meters per hour (dry standard cubic feet per hour);

R_c = Coke burn-off rate, kilograms per hour (kg/hr) [lb per hour (lb/hr)] coke; and

K = Conversion factor, 1.0 grams per gram (7,000 grains per lb).

(iii) The coke burn-off rate (R_c) is computed for each run using Equation 6 of this section:

$$R_c = K_1 Q_r (\%CO_2 + \%CO) + K_2 Q_a - K_3 Q_r \left(\%CO/2 + \%CO_2 + \%O_2 \right) + K_3 Q_{oxy} (\%O_{oxy}) \qquad \text{(Eq. 6)}$$

Where:

R_c = Coke burn-off rate, kg/hr (lb/hr);

Q_r = Volumetric flow rate of exhaust gas from FCCU regenerator or fluid coking burner before any emissions control or energy recovery system that burns auxiliary fuel, dry standard cubic meters per minute (dscm/min) [dry standard cubic feet per minute (dscf/min)];

Q_a = Volumetric flow rate of air to FCCU regenerator or fluid coking burner, as determined from the unit's control room instrumentation, dscm/min (dscf/min);

Q_{oxy} = Volumetric flow rate of O_2 enriched air to FCCU regenerator or fluid coking unit, as determined from the unit's control room instrumentation, dscm/min (dscf/min);

$\%CO_2$ = Carbon dioxide (CO_2) concentration in FCCU regenerator or fluid coking burner exhaust, percent by volume (dry basis);

%CO = CO concentration in FCCU regenerator or fluid coking burner exhaust, percent by volume (dry basis);

$\%O_2$ = O_2 concentration in FCCU regenerator or fluid coking burner exhaust, percent by volume (dry basis);

$\%O_{oxy}$ = O_2 concentration in O_2 enriched air stream inlet to the FCCU regenerator or fluid coking burner, percent by volume (dry basis);

K_1 = Material balance and conversion factor, 0.2982 (kg-min)/(hr-dscm-%) [0.0186 (lb-min)/(hr-dscf-%)];

K_2 = Material balance and conversion factor, 2.088 (kg-min)/(hr-dscm) [0.1303 (lb-min)/(hr-dscf)]; and

K_3 = Material balance and conversion factor, 0.0994 (kg-min)/(hr-dscm-%) [0.00624 (lb-min)/(hr-dscf-%)].

(iv) During the performance test, the volumetric flow rate of exhaust gas from catalyst regenerator (Q_r) before any emission control or energy recovery system that burns auxiliary fuel is measured using Method 2 of appendix A–1 to part 60.

(v) For subsequent calculations of coke burn-off rates or exhaust gas flow rates, the volumetric flow rate of Q_r is calculated using average exhaust gas concentrations as measured by the monitors required in § 60.105a(b)(2), if applicable, using Equation 7 of this section:

$$Q_r = \frac{79 \times Q_a + (100 - \%Oxy) \times Q_{oxy}}{100 - \%CO_2 - \%CO - \%O_2} \qquad \text{(Eq. 7)}$$

Where:

Q_r = Volumetric flow rate of exhaust gas from FCCU regenerator or fluid coking burner before any emission control or energy recovery system that burns auxiliary fuel, dscm/min (dscf/min);

Q_a = Volumetric flow rate of air to FCCU regenerator or fluid coking burner, as determined from the unit's control room instrumentation, dscm/min (dscf/min);

Q_{oxy} = Volumetric flow rate of O_2 enriched air to FCCU regenerator or fluid coking unit, as determined from the unit's control room instrumentation, dscm/min (dscf/min);

$\%CO_2$ = Carbon dioxide concentration in FCCU regenerator or fluid coking burner exhaust, percent by volume (dry basis);

%CO = CO concentration FCCU regenerator or fluid coking burner exhaust, percent by volume (dry basis). When no auxiliary fuel is burned and a continuous CO monitor is not required in accordance with § 60.105a(h)(3), assume %CO to be zero;

$\%O_2$ = O_2 concentration in FCCU regenerator or fluid coking burner exhaust, percent by volume (dry basis); and

$\%O_{oxy}$ = O_2 concentration in O_2 enriched air stream inlet to the FCCU regenerator or fluid coking burner, percent by volume (dry basis).

(5) Method 6, 6A, or 6C of appendix A–4 to part 60 for moisture content and for the concentration of SO_2; the duration of each test run must be no less than 4 hours. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6 or 6A of appendix A–4 to part 60.

(6) Method 7, 7A, 7C, 7D, or 7E of appendix A–4 to part 60 for moisture content and for the concentration of NO_X calculated as nitrogen dioxide (NO_2); the duration of each test run must be no less than 4 hours. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 7 or 7C of appendix A–4 to part 60.

(7) Method 10, 10A, or 10B of appendix A–4 to part 60 for moisture content and for the concentration of CO. The sampling time for each run must be 60 minutes.

(8) The owner or operator shall adjust PM, NO_X, SO_2 and CO pollutant concentrations to 0-percent excess air or 0-percent O_2 using Equation 8 of this section:

$$C_{adj} = C_{meas}\left[20.9_c \big/ (20.9 - \%O_2)\right] \qquad \text{(Eq. 8)}$$

Where:

C_{adj} = pollutant concentration adjusted to 0-percent excess air or O_2, parts per million (ppm) or g/dscm;

C_{meas} = pollutant concentration measured on a dry basis, ppm or g/dscm;

20.9_c = 20.9 percent $O_2 - 0.0$ percent O_2 (defined O_2 correction basis), percent;

20.9 = O_2 concentration in air, percent; and

$\%O_2$ = O_2 concentration measured on a dry basis, percent.

(e) The owner or operator of a FCCU or FCU that is controlled by an electrostatic precipitator or wet scrubber and that is subject to control device operating parameter limits in § 60.102a(c) shall establish the limits based on the performance test results according to the following procedures:

(1) Reduce the parameter monitoring data to hourly averages for each test run;

(2) Determine the hourly average operating limit for each required parameter as the average of the three test runs.

(f) The owner or operator of an FCCU or FCU that uses cyclones to comply with the PM limit in § 60.102a(b)(1) and elects to comply with the COMS alternative monitoring option in § 60.105a(d) shall establish a site-specific opacity operating limit according to the procedures in paragraphs (f)(1) through (3) of this section.

(1) Collect COMS data every 10 seconds during the entire period of the PM performance test and reduce the data to 6-minute averages.

(2) Determine and record the hourly average opacity from all the 6-minute averages.

(3) Compute the site-specific limit using Equation 9 of this section:

$$Opacity\ \ Limit = Opacity_{st}\ x \left(\frac{1\,\text{lb} / 1{,}000\ \text{lb coke burn}}{PMEmR_{st}} \right) \qquad \text{(Eq. 9)}$$

Where:

Opacity limit = Maximum permissible 3-hour average opacity, percent, or 10 percent, whichever is greater;

$Opacity_{st}$ = Hourly average opacity measured during the source test, percent; and

$PMEmR_{st}$ = PM emission rate measured during the source test, lb/1,000 lb coke burn.

(g) The owner or operator of a FCCU or FCU that is exempt from the requirement to install and operate a CO CEMS pursuant to § 60.105a(h)(3) and that is subject to control device operating parameter limits in § 60.102a(c) shall establish the limits based on the performance test results using the procedures in paragraphs (g)(1) and (2) of this section.

(1) Reduce the temperature and O_2 concentrations from the parameter monitoring systems to hourly averages for each test run.

(2) Determine the operating limit for temperature and O_2 concentrations as the average of the average temperature and O_2 concentration for the three test runs.

(h) The owner or operator shall determine compliance with the SO_2 and H_2S emissions limits for sulfur recovery plants in §§ 60.102a(f)(1)(i), 60.102a(f)(1)(iii), 60.102a(f)(1)(iii), 60.102a(f)(2)(i), and 60.102a(f)(2)(iii) and the reduced sulfur compounds and H_2S emissions limits for sulfur recovery plants in § 60.102a(f)(1)(ii) and § 60.102a(f)(2)(ii) using the following methods and procedures:

(1) Method 1 of appendix A–1 to part 60 for sample and velocity traverses.

(2) Method 2 of appendix A–1 to part 60 for velocity and volumetric flow rate.

(3) Method 3, 3A, or 3B of appendix A–2 to part 60 for gas analysis. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(4) Method 6, 6A, or 6C of appendix A–4 to part 60 to determine the SO_2 concentration. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6 or 6A of appendix A–4 to part 60.

(5) Method 15 or 15A of appendix A–5 to part 60 or Method 16 of appendix A–

6 to part 60 to determine the reduced sulfur compounds and H_2S concentrations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 15A of appendix A–5 to part 60.

(i) Each run consists of 16 samples taken over a minimum of 3 hours.

(ii) The owner or operator shall calculate the average H_2S concentration after correcting for moisture and O_2 as the arithmetic average of the H_2S concentration for each sample during the run (ppmv, dry basis, corrected to 0 percent excess air).

(iii) The owner or operator shall calculate the SO_2 equivalent for each run after correcting for moisture and O_2 as the arithmetic average of the SO_2 equivalent of reduced sulfur compounds for each sample during the run (ppmv, dry basis, corrected to 0 percent excess air).

(iv) The owner or operator shall use Equation 8 of this section to adjust pollutant concentrations to 0-percent O_2 or 0- percent excess air.

(i) The owner or operator shall determine compliance with the SO_2 and NO_X emissions limits in § 60.102a(g) for a fuel gas combustion device according to the following test methods and procedures:

(1) Method 1 of appendix A–1 to part 60 for sample and velocity traverses;

(2) Method 2 of appendix A–1 to part 60 for velocity and volumetric flow rate;

(3) Method 3, 3A, or 3B of appendix A–2 to part 60 for gas analysis. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60;

(4) Method 6, 6A, or 6C of appendix A–4 to part 60 to determine the SO_2 concentration. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6 or 6A of appendix A–4 to part 60.

(i) The performance test consists of 3 valid test runs; the duration of each test run must be no less than 1 hour.

(ii) If a single fuel gas combustion device having a common source of fuel gas is monitored as allowed under § 60.107a(a)(1)(v), only one performance test is required. That is, performance tests are not required when a new affected fuel gas combustion device is added to a common source of fuel gas that previously demonstrated compliance.

(5) Method 7, 7A, 7C, 7D, or 7E of appendix A–4 to part 60 for moisture content and for the concentration of NO_X calculated as NO_2; the duration of each test run must be no less than 4 hours. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 7 or 7C of appendix A–4 to part 60.

(6) For process heaters with a rated heat capacity between 40 and 100 MMBtu/hr that elect to demonstrate continuous compliance with a maximum excess oxygen limit as provided in § 60.107a(c)(6) or (d)(8), the owner or operator shall establish the O_2 operating limit or O_2 operating curve based on the performance test results according to the requirements in paragraph (i)(6)(i) or (ii) of this section, respectively.

(i) If a single O_2 operating limit will be used:

(A) Conduct the performance test following the methods provided in paragraphs (i)(1), (2), (3) and (5) of this section when the process heater is firing at no less than 70 percent of the rated heat capacity. For co-fired process heaters, conduct at least one of the test runs while the process heater is being supplied by both fuel gas and fuel oil and conduct at least one of the test runs while the process heater is being supplied solely by fuel gas.

(B) Each test will consist of three test runs. Calculate the NO_X concentration for the performance test as the average of the NO_X concentrations from each of the three test runs. If the NO_X concentration for the performance test is less than or equal to the numerical value of the applicable NO_X emissions limit (regardless of averaging time), then the test is considered to be a valid test.

(C) Determine the average O_2 concentration for each test run of a valid test.

(D) Calculate the O_2 operating limit as the average O_2 concentration of the three test runs from a valid test.

(ii) If an O_2 operating curve will be used:

(A) Conduct a performance test following the methods provided in paragraphs (i)(1), (2), (3) and (5) of this section at a representative condition for each operating range for which different O_2 operating limits will be established. Different operating conditions may be defined as different firing rates (*e.g.*, above 50 percent of rated heat capacity and at or below 50 percent of rated heat capacity) and/or, for co-fired process heaters, different fuel mixtures (*e.g.*, primarily gas fired, primarily oil fired, and equally co-fired, *i.e.*, approximately 50 percent of the input heating value is from fuel gas and approximately 50 percent of the input heating value is from fuel oil). Performance tests for different operating ranges may be conducted at different times.

(B) Each test will consist of three test runs. Calculate the NO_X concentration for the performance test as the average of the NO_X concentrations from each of the three test runs. If the NO_X concentration for the performance test is less than or equal to the numerical value of the applicable NO_X emissions limit (regardless of averaging time), then the test is considered to be a valid test.

(C) If an operating curve is developed for different firing rates, conduct at least one test when the process heater is firing at no less than 70 percent of the rated heat capacity and at least one test under turndown conditions (*i.e.*, when the process heater is firing at 50 percent or less of the rated heat capacity). If O_2 operating limits are developed for co-fired process heaters based only on overall firing rates (and not by fuel mixtures), conduct at least one of the test runs for each test while the process heater is being supplied by both fuel gas and fuel oil and conduct at least one of the test runs while the process heater is being supplied solely by fuel gas.

(D) Determine the average O_2 concentration for each test run of a valid test.

(E) Calculate the O_2 operating limit for each operating range as the average O_2 concentration of the three test runs from a valid test conducted at the representative conditions for that given operating range.

(F) Identify the firing rates for which the different operating limits apply. If only two operating limits are established based on firing rates, the O_2 operating limits established when the process heater is firing at no less than 70 percent of the rated heat capacity must apply when the process heater is firing above 50 percent of the rated heat capacity and the O_2 operating limits established for turndown conditions must apply when the process heater is firing at 50 percent or less of the rated heat capacity.

(G) Operating limits associated with each interval will be valid for 2 years or until another operating limit is established for that interval based on a more recent performance test specific for that interval, whichever occurs first. Owners and operators must use the operating limits determined for a given interval based on the most recent performance test conducted for that interval.

(7) The owner or operator of a process heater complying with a NO_X limit in terms of lb/MMBtu as provided in §60.102a(g)(2)(i)(B), (g)(2)(ii)(B), (g)(2)(iii)(B) or (g)(2)(iv)(B) or a process heater with a rated heat capacity between 40 and 100 MMBtu/hr that elects to demonstrate continuous compliance with a maximum excess O_2 limit, as provided in §60.107a(c)(6) or (d)(8), shall determine heat input to the process heater in MMBtu/hr during each performance test run by measuring fuel gas flow rate, fuel oil flow rate (as applicable) and heating value content according to the methods provided in §60.107a(d)(5), (d)(6), and (d)(4) or (d)(7), respectively.

(8) The owner or operator shall use Equation 8 of this section to adjust pollutant concentrations to 0-percent O_2 or 0- percent excess air.

(j) The owner or operator shall determine compliance with the applicable H_2S emissions limit in §60.102a(g)(1) for a fuel gas combustion device or the concentration requirement in

§ 60.103a(h) for a flare according to the following test methods and procedures:

(1) Method 1 of appendix A–1 to part 60 for sample and velocity traverses;

(2) Method 2 of appendix A–1 to part 60 for velocity and volumetric flow rate;

(3) Method 3, 3A, or 3B of appendix A–2 to part 60 for gas analysis. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60;

(4) EPA Method 11, 15 or 15A of Appendix A–5 to part 60 or EPA Method 16 of Appendix A–6 to part 60 for determining the H_2S concentration for affected facilities using an H_2S monitor as specified in § 60.107a(a)(2). The method ANSI/ASME PTC 19.10–1981 (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 15A of Appendix A–5 to part 60. The owner or operator may demonstrate compliance based on the mixture used in the fuel gas combustion device or flare or for each individual fuel gas stream used in the fuel gas combustion device or flare.

(i) For Method 11 of appendix A–5 to part 60, the sampling time and sample volume must be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times must be taken at about 1-hour intervals. The arithmetic average of these two samples constitutes a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H_2S may necessitate sampling for longer periods of time.

(ii) For Method 15 of appendix A–5 to part 60, at least three injects over a 1-hour period constitutes a run.

(iii) For Method 15A of appendix A–5 to part 60, a 1-hour sample constitutes a run. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 15A of appendix A–5 to part 60.

(iv) If monitoring is conducted at a single point in a common source of fuel gas as allowed under § 60.107a(a)(2)(iv), only one performance test is required. That is, performance tests are not required when a new affected fuel gas combustion device or flare is added to a common source of fuel gas that previously demonstrated compliance.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56470, Sep. 12, 2012]

§ 60.105a Monitoring of emissions and operations for fluid catalytic cracking units (FCCU) and fluid coking units (FCU).

(a) *FCCU and FCU subject to PM emissions limit.* Each owner or operator subject to the provisions of this subpart shall monitor each FCCU and FCU subject to the PM emissions limit in § 60.102a(b)(1) according to the requirements in paragraph (b), (c), (d), or (e) of this section.

(b) *Control device operating parameters.* Each owner or operator of a FCCU or FCU subject to the PM per coke burn-off emissions limit in § 60.102a(b)(1) that uses a control device other than fabric filter or cyclone shall comply with the requirements in paragraphs (b)(1) and (2) of this section.

(1) The owner or operator shall install, operate and maintain continuous parameter monitor systems (CPMS) to measure and record operating parameters for each control device according to the applicable requirements in paragraphs (b)(1)(i) through (v) of this section.

(i) For units controlled using an electrostatic precipitator, the owner or operator shall use CPMS to measure and record the hourly average total power input and secondary voltage to the entire system.

(ii) For units controlled using a wet scrubber, the owner or operator shall use CPMS to measure and record the hourly average pressure drop, liquid feed rate, and exhaust gas flow rate. As an alternative to a CPMS, the owner or operator must comply with the requirements in either paragraph (b)(1)(ii)(A) or (B) of this section.

(A) As an alternative to pressure drop, the owner or operator of a jet ejector type wet scrubber or other type of wet scrubber equipped with atomizing spray nozzles must conduct a daily check of the air or water pressure to the spray nozzles and record the results of each check.

(B) As an alternative to exhaust gas flow rate, the owner or operator shall comply with the approved alternative for monitoring exhaust gas flow rate in 40 CFR 63.1573(a) of the National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.

(iii) The owner or operator shall install, operate, and maintain each CPMS according to the manufacturer's specifications and requirements.

(iv) The owner or operator shall determine and record the average coke burn-off rate and hours of operation for each FCCU or FCU using the procedures in §60.104a(d)(4)(iii).

(v) If you use a control device other than an electrostatic precipitator, wet scrubber, fabric filter, or cyclone, you may request approval to monitor parameters other than those required in paragraph (b)(1) of this section by submitting an alternative monitoring plan to the Administrator. The request must include the information in paragraphs (b)(1)(v)(A) through (E) of this section.

(A) A description of each affected facility and the parameter(s) to be monitored to determine whether the affected facility will continuously comply with the emission limitations and an explanation of the criteria used to select the parameter(s).

(B) A description of the methods and procedures that will be used to demonstrate that the parameter(s) can be used to determine whether the affected facility will continuously comply with the emission limitations and the schedule for this demonstration. The owner or operator must certify that an operating limit will be established for the monitored parameter(s) that represents the conditions in existence when the control device is being properly operated and maintained to meet the emission limitation.

(C) The frequency and content of the recordkeeping, recording, and reporting, if monitoring and recording are not continuous. The owner or operator also must include the rationale for the proposed monitoring, recording, and reporting requirements.

(D) Supporting calculations.

(E) Averaging time for the alternative operating parameter.

(2) For use in determining the coke burn-off rate for an FCCU or FCU, the owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring the concentrations of CO_2, O_2 (dry basis), and if needed, CO in the exhaust gases prior to any control or energy recovery system that burns auxiliary fuels.

(i) The owner or operator shall install, operate and maintain each monitor according to Performance Specifications 3 and 4 of Appendix B to part 60.

(ii) The owner or operator shall conduct performance evaluations of each CO_2, O_2 and CO monitor according to the requirements in §60.13(c) and Performance Specifications 3 and 4 of Appendix B to part 60. The owner or operator shall use EPA Method 3 of Appendix A–3 to part 60 and EPA Method 10, 10A or 10B of Appendix A–4 to part 60 for conducting the relative accuracy evaluations.

(iii) The owner or operator shall comply with the quality assurance requirements of procedure 1 of appendix F to part 60, including quarterly accuracy determinations for CO_2 and CO monitors, annual accuracy determinations for O_2 monitors, and daily calibration drift tests.

(c) *Bag leak detection systems.* Each owner or operator shall install, operate, and maintain a bag leak detection system for each baghouse or similar fabric filter control device that is used to comply with the PM per coke burn-off emissions limit in §60.102a(b)(1) for an FCCU or FCU according to paragraph (c)(1) of this section; prepare and operate by a site-specific monitoring plan according to paragraph (c)(2) of this section; take action according to paragraph (c)(3) of this section; and record information according to paragraph (c)(4) of this section.

(1) Each bag leak detection system must meet the specifications and requirements in paragraphs (c)(1)(i) through (viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.00044 grains per actual cubic foot or less.

(ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

(iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (c)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(v) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (c)(1)(vi) of this section.

(vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (c)(2) of this section.

(vii) The owner or operator shall install the bag leak detection sensor downstream of the baghouse and upstream of any wet scrubber.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(2) The owner or operator shall develop and submit to the Administrator for approval a site-specific monitoring plan for each baghouse and bag leak detection system. The owner or operator shall operate and maintain each baghouse and bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (c)(2)(i) through (vii) of this section.

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system, including quality assurance procedures;

(iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(v) How the bag leak detection system output will be recorded and stored;

(vi) Procedures as specified in paragraph (c)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable; and

(vii) How the baghouse system will be operated and maintained, including monitoring of pressure drop across baghouse cells and frequency of visual inspections of the baghouse interior and baghouse components such as fans and dust removal and bag cleaning mechanisms.

(3) For each bag leak detection system, the owner or operator shall initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (c)(2)(vi) of this section, the owner or operator shall alleviate the cause of the alarm within 3 hours of the alarm by taking whatever action(s) are necessary. Actions may include, but are not limited to the following:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate 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; or

(vi) Shutting down the process producing the particulate emissions.

(4) The owner or operator shall maintain records of the information specified in paragraphs (c)(4)(i) through (iii) of this section for each bag leak detection system.

(i) Records of the bag leak detection system output;

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the alarm was alleviated within 3 hours of the alarm.

(d) *Continuous emissions monitoring systems (CEMS).* An owner or operator subject to the PM concentration emission limit (in gr/dscf) in §60.102a(b)(1) for an FCCU or FCU shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration (0 percent excess air) of PM in the exhaust gases prior to release to the atmosphere. The monitor must include an O_2 monitor for correcting the data for excess air.

(1) The owner or operator shall install, operate, and maintain each PM monitor according to Performance Specification 11 of appendix B to part 60. The span value of this PM monitor is 0.08 gr/dscf PM.

(2) The owner or operator shall conduct performance evaluations of each PM monitor according to the requirements in §60.13(c) and Performance Specification 11 of appendix B to part 60. The owner or operator shall use EPA Methods 5 or 5I of appendix A–3 to part 60 or Method 17 of appendix A–6 to part 60 for conducting the relative accuracy evaluations.

(3) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60. The span value of this O_2 monitor must be selected between 10 and 25 percent, inclusive.

(4) The owner or operator shall conduct performance evaluations of each O_2 monitor according to the requirements in §60.13(c) and Performance Specification 3 of appendix B to part 60. Method 3, 3A, or 3B of appendix A–2 to part 60 shall be used for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(5) The owner or operator shall comply with the quality assurance requirements of Procedure 2 of appendix B to part 60 for each PM CEMS and Procedure 1 of appendix F to part 60 for each O_2 monitor, including quarterly accuracy determinations for each PM monitor, annual accuracy determinations for each O_2 monitor, and daily calibration drift tests.

(e) *Alternative monitoring option for FCCU and FCU—COMS.* Each owner or operator of an FCCU or FCU that uses cyclones to comply with the PM emission limit in §60.102a(b)(1) shall monitor the opacity of emissions according to the requirements in paragraphs (e)(1) through (3) of this section.

(1) The owner or operator shall install, operate, and maintain an instrument for continuously monitoring and recording the opacity of emissions from the FCCU or the FCU exhaust vent.

(2) The owner or operator shall install, operate, and maintain each COMS according to Performance Specification 1 of appendix B to part 60. The instrument shall be spanned at 20 to 60 percent opacity.

(3) The owner or operator shall conduct performance evaluations of each COMS according to §60.13(c) and Performance Specification 1 of appendix B to part 60.

(f) *FCCU and FCU subject to NO_X limit.* Each owner or operator subject to the NO_X emissions limit in § 60.102a(b)(2) for an FCCU or FCU shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis, 0 percent excess air) of NO_X emissions into the atmosphere. The monitor must include an O_2 monitor for correcting the data for excess air.

(1) The owner or operator shall install, operate, and maintain each NO_X monitor according to Performance Specification 2 of appendix B to part 60. The span value of this NO_X monitor is 200 ppmv NO_X.

(2) The owner or operator shall conduct performance evaluations of each NO_X monitor according to the requirements in § 60.13(c) and Performance Specification 2 of appendix B to part 60. The owner or operator shall use Methods 7, 7A, 7C, 7D, or 7E of appendix A–4 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 7 or 7C of appendix A–4 to part 60.

(3) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60. The span value of this O_2 monitor must be selected between 10 and 25 percent, inclusive.

(4) The owner or operator shall conduct performance evaluations of each O_2 monitor according to the requirements in § 60.13(c) and Performance Specification 3 of appendix B to part 60. Method 3, 3A, or 3B of appendix A–2 to part 60 shall be used for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(5) The owner or operator shall comply with the quality assurance requirements of Procedure 1 of appendix F to part 60 for each NO_X and O_2 monitor, including quarterly accuracy determinations for NO_X monitors, annual accuracy determinations for O_2 monitors, and daily calibration drift tests.

(g) *FCCU and FCU subject to SO_2 limit.* The owner or operator subject to the SO_2 emissions limit in § 60.102a(b)(3) for an FCCU or an FCU shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis, corrected to 0 percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include an O_2 monitor for correcting the data for excess air.

(1) The owner or operator shall install, operate, and maintain each SO_2 monitor according to Performance Specification 2 of appendix B to part 60. The span value of this SO_2 monitor is 200 ppmv SO_2.

(2) The owner or operator shall conduct performance evaluations of each SO_2 monitor according to the requirements in § 60.13(c) and Performance Specification 2 of appendix B to part 60. The owner or operator shall use Methods 6, 6A, or 6C of appendix A–4 to part 60 for conducting the relative accuracy evaluations. The method ANSI / ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6 or 6A of appendix A–4 to part 60.

(3) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60. The span value of this O_2 monitor must be selected between 10 and 25 percent, inclusive.

(4) The owner or operator shall conduct performance evaluations of each O_2 monitor according to the requirements in § 60.13(c) and Performance Specification 3 of appendix B to part 60. Method 3, 3A, or 3B of appendix A–2 to part 60 shall be used for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(5) The owner or operator shall comply with the quality assurance requirements in Procedure 1 of appendix F to

part 60 for each SO_2 and O_2 monitor, including quarterly accuracy determinations for SO_2 monitors, annual accuracy determinations for O_2 monitors, and daily calibration drift tests.

(h) *FCCU and fluid coking units subject to CO emissions limit*. Except as specified in paragraph (h)(3) of this section, the owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of CO emissions into the atmosphere from each FCCU and FCU subject to the CO emissions limit in §60.102a(b)(4).

(1) The owner or operator shall install, operate, and maintain each CO monitor according to Performance Specification 4 or 4A of appendix B to part 60. The span value for this instrument is 1,000 ppm CO.

(2) The owner or operator shall conduct performance evaluations of each CO monitor according to the requirements in §60.13(c) and Performance Specification 4 or 4A of appendix B to part 60. The owner or operator shall use Methods 10, 10A, or 10B of appendix A–4 to part 60 for conducting the relative accuracy evaluations.

(3) A CO CEMS need not be installed if the owner or operator demonstrates that all hourly average CO emissions are and will remain less than 50 ppmv (dry basis) corrected to 0 percent excess air. The Administrator may revoke this exemption from monitoring upon a determination that CO emissions on an hourly average basis have exceeded 50 ppmv (dry basis) corrected to 0 percent excess air, in which case a CO CEMS shall be installed within 180 days.

(i) The demonstration shall consist of continuously monitoring CO emissions for 30 days using an instrument that meets the requirements of Performance Specification 4 or 4A of appendix B to part 60. The span value shall be 100 ppm CO instead of 1,000 ppm, and the relative accuracy limit shall be 10 percent of the average CO emissions or 5 ppm CO, whichever is greater. For instruments that are identical to Method 10 of appendix A–4 to part 60 and employ the sample conditioning system of Method 10A of appendix A–4 to part 60, the alternative relative accuracy test procedure in section 10.1 of Performance Specification 2 of appendix B to part 60 may be used in place of the relative accuracy test.

(ii) The owner or operator must submit the following information to the Administrator:

(A) The measurement data specified in paragraph (h)(3)(i) of this section along with all other operating data known to affect CO emissions; and

(B) Descriptions of the CPMS for exhaust gas temperature and O_2 monitor required in paragraph (h)(4) of this section and operating limits for those parameters to ensure combustion conditions remain similar to those that exist during the demonstration period.

(iii) The effective date of the exemption from installation and operation of a CO CEMS is the date of submission of the information and data required in paragraph (h)(3)(ii) of this section.

(4) The owner or operator of a FCCU or FCU that is exempted from the requirement to install and operate a CO CEMS in paragraph (h)(3) of this section shall install, operate, calibrate, and maintain CPMS to measure and record the operating parameters in paragraph (h)(4)(i) or (ii) of this section. The owner or operator shall install, operate, and maintain each CPMS according to the manufacturer's specifications.

(i) For a FCCU or FCU with no post-combustion control device, the temperature and O_2 concentration of the exhaust gas stream exiting the unit.

(ii) For a FCCU or FCU with a post-combustion control device, the temperature and O_2 concentration of the exhaust gas stream exiting the control device.

(i) *Excess emissions*. For the purpose of reports required by §60.7(c), periods of excess emissions for a FCCU or FCU subject to the emissions limitations in §60.102a(b) are defined as specified in paragraphs (i)(1) through (6) of this section. Note: Determine all averages, except for opacity, as the arithmetic average of the applicable 1-hour averages, *e.g.*, determine the rolling 3-hour average as the arithmetic average of three contiguous 1-hour averages.

(1) If a CPMS is used according to §60.105a(b)(1), all 3-hour periods during which the average PM control device

operating characteristics, as measured by the continuous monitoring systems under § 60.105a(b)(1), fall below the levels established during the performance test.

(2) If a PM CEMS is used according to § 60.105a(d), all 7-day periods during which the average PM emission rate, as measured by the continuous PM monitoring system under § 60.105a(d) exceeds 0.040 gr/dscf corrected to 0 percent excess air for a modified or reconstructed FCCU, 0.020 gr/dscf corrected to 0 percent excess air for a newly constructed FCCU, or 0.040 gr/dscf for an affected fluid coking unit.

(3) If a COMS is used according to § 60.105a(e), all 3-hour periods during which the average opacity, as measured by the COMS under § 60.105a(e), exceeds the site-specific limit established during the most recent performance test.

(4) All rolling 7-day periods during which the average concentration of NO_X as measured by the NO_X CEMS under § 60.105a(f) exceeds 80 ppmv for an affected FCCU or FCU.

(5) All rolling 7-day periods during which the average concentration of SO_2 as measured by the SO_2 CEMS under § 60.105a(g) exceeds 50 ppmv, and all rolling 365-day periods during which the average concentration of SO_2 as measured by the SO_2 CEMS exceeds 25 ppmv.

(6) All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system under § 1A60.105a(h) exceeds 500 ppmv or, if applicable, all 1-hour periods during which the average temperature and O_2 concentration as measured by the continuous monitoring systems under § 60.105a(h)(4) fall below the operating limits established during the performance test.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56473, Sep. 12, 2012]

§ 60.106a Monitoring of emissions and operations for sulfur recovery plants.

(a) The owner or operator of a sulfur recovery plant that is subject to the emissions limits in § 60.102a(f)(1) or § 60.102a(f)(2) shall:

(1) For sulfur recovery plants subject to the SO_2 emission limit in § 60.102a(f)(1)(i) or § 60.102a(f)(2)(i), the owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of any SO_2 emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are two times the applicable SO_2 emission limit and between 10 and 25 percent O_2, inclusive.

(ii) The owner or operator shall install, operate, and maintain each SO_2 CEMS according to Performance Specification 2 of appendix B to part 60.

(iii) The owner or operator shall conduct performance evaluations of each SO_2 monitor according to the requirements in § 60.13(c) and Performance Specification 2 of appendix B to part 60. The owner or operator shall use Methods 6 or 6C of appendix A–4 to part 60 and Method 3 or 3A of appendix A–2 of part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6.

(2) For sulfur recovery plants that are subject to the reduced sulfur compound and H_2S emission limit in § 60.102a(f)(1)(ii) or § 60.102a(f)(2)(ii), the owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of reduced sulfur, H_2S, and O_2 emissions into the atmosphere. The reduced sulfur emissions shall be calculated as SO_2 (dry basis, zero percent excess air).

(i) The span values for this monitor are two times the applicable reduced sulfur emission limit, two times the H_2S emission limit, and between 10 and 25 percent O_2, inclusive.

(ii) The owner or operator shall install, operate, and maintain each reduced sulfur CEMS according to Performance Specification 5 of appendix B to part 60.

(iii) The owner or operator shall conduct performance evaluations of each reduced sulfur monitor according to the requirements in § 60.13(c) and Performance Specification 5 of appendix B

to part 60. The owner or operator shall use Methods 15 or 15A of appendix A–5 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 15A of appendix A–5 to part 60.

(iv) The owner or operator shall install, operate, and maintain each H_2S CEMS according to Performance Specification 7 of appendix B to part 60.

(v) The owner or operator shall conduct performance evaluations of each reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to part 60. The owner or operator shall use Methods 11, 15, or 15A of appendix A–5 to part 60 or Method 16 of appendix A–6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 15A of appendix A–5 to part 60.

(vi) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60.

(vii) The span value for the O_2 monitor must be selected between 10 and 25 percent, inclusive.

(viii) The owner or operator shall conduct performance evaluations for the O_2 monitor according to the requirements of §60.13(c) and Performance Specification 3 of appendix B to part 60. The owner or operator shall use Methods 3, 3A, or 3B of appendix A–2 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(ix) The owner or operator shall comply with the applicable quality assurance procedures of appendix F to part 60 for each monitor, including annual accuracy determinations for each O_2 monitor, and daily calibration drift determinations.

(3) In place of the reduced sulfur monitor required in paragraph (a)(2) of this section, the owner or operator shall install, calibrate, operate, and maintain an instrument using an air or O_2 dilution and oxidation system to convert any reduced sulfur to SO_2 for continuously monitoring and recording the concentration (dry basis, 0 percent excess air) of the total resultant SO_2. The monitor must include an O_2 monitor for correcting the data for excess O_2.

(i) The span value for this monitor is two times the applicable SO_2 emission limit.

(ii) The owner or operator shall conduct performance evaluations of each SO_2 monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to part 60. The owner or operator shall use Methods 15 or 15A of appendix A–5 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 15A of appendix A–5 to part 60.

(iii) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60.

(iv) The span value for the O_2 monitor must be selected between 10 and 25 percent, inclusive.

(v) The owner or operator shall conduct performance evaluations for the O_2 monitor according to the requirements of §60.13(c) and Performance Specification 3 of appendix B to part 60. The owner or operator shall use Methods 3, 3A, or 3B of appendix A–2 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(vi) The owner or operator shall comply with the applicable quality assurance procedures of appendix F to part 60 for each monitor, including quarterly accuracy determinations for each SO_2 monitor, annual accuracy determinations for each O_2 monitor, and daily calibration drift determinations.

(b) *Excess emissions.* For the purpose of reports required by §60.7(c), periods of excess emissions for sulfur recovery

plants subject to the emissions limitations in § 60.102a(f) are defined as specified in paragraphs (b)(1) through (3) of this section. NOTE: Determine all averages as the arithmetic average of the applicable 1-hour averages, e.g., determine the rolling 12-hour average as the arithmetic average of 12 contiguous 1-hour averages.

(1) All 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system required under paragraph (a)(1) of this section exceeds the applicable emission limit (dry basis, zero percent excess air); or

(2) All 12-hour periods during which the average concentration of reduced sulfur (as SO_2) as measured by the reduced sulfur continuous monitoring system required under paragraph (a)(2) of this section exceeds the applicable emission limit; or

(3) All 12-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under paragraph (a)(2) of this section exceeds the applicable emission limit (dry basis, 0 percent excess air).

§ 60.107a Monitoring of emissions and operations for fuel gas combustion devices and flares.

(a) *Fuel gas combustion devices subject to* SO_2 or H_2S *limit and flares subject to* H_2S *concentration requirements.* The owner or operator of a fuel gas combustion device that is subject to § 60.102a(g)(1) and elects to comply with the SO_2 emission limits in § 60.102a(g)(1)(i) shall comply with the requirements in paragraph (a)(1) of this section. The owner or operator of a fuel gas combustion device that is subject to § 60.102a(g)(1) and elects to comply with the H_2S concentration limits in § 60.102a(g)(1)(ii) or a flare that is subject to the H_2S concentration requirement in § 60.103a(h) shall comply with paragraph (a)(2) of this section.

(1) The owner or operator of a fuel gas combustion device that elects to comply with the SO_2 emissions limits in § 60.102a(g)(1)(i) shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of SO_2 emissions into the atmosphere. The monitor must include an O_2 monitor for correcting the data for excess air.

(i) The owner or operator shall install, operate, and maintain each SO_2 monitor according to Performance Specification 2 of appendix B to part 60. The span value for the SO_2 monitor is 50 ppm SO_2.

(ii) The owner or operator shall conduct performance evaluations for the SO_2 monitor according to the requirements of § 60.13(c) and Performance Specification 2 of appendix B to part 60. The owner or operator shall use Methods 6, 6A, or 6C of appendix A–4 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 6 or 6A of appendix A–4 to part 60. Samples taken by Method 6 of appendix A–4 to part 60 shall be taken at a flow rate of approximately 2 liters/min for at least 30 minutes. The relative accuracy limit shall be 20 percent or 4 ppm, whichever is greater, and the calibration drift limit shall be 5 percent of the established span value.

(iii) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60. The span value for the O_2 monitor must be selected between 10 and 25 percent, inclusive.

(iv) The owner or operator shall conduct performance evaluations for the O_2 monitor according to the requirements of § 60.13(c) and Performance Specification 3 of appendix B to part 60. The owner or operator shall use Methods 3, 3A, or 3B of appendix A–2 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see § 60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(v) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60, including quarterly accuracy determinations for SO_2 monitors, annual accuracy determinations for O_2 monitors, and daily calibration drift tests.

(vi) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location (i.e., after one of the combustion devices), if monitoring at this location accurately represents the SO_2 emissions into the atmosphere from each of the combustion devices.

(2) The owner or operator of a fuel gas combustion device that elects to comply with the H_2S concentration limits in §60.102a(g)(1)(ii) or a flare that is subject to the H_2S concentration requirement in §60.103a(h) shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any fuel gas combustion device or flare.

(i) The owner or operator shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of Appendix B to part 60. The span value for this instrument is 300 ppmv H_2S.

(ii) The owner or operator shall conduct performance evaluations for each H_2S monitor according to the requirements of §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A–5 to part 60 or Method 16 of appendix A–6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 15A of appendix A–5 to part 60.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(iv) Fuel gas combustion devices or flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned in the respective fuel gas combustion devices or flares.

(v) The owner or operator of a flare subject to §60.103a(c) through (e) may use the instrument required in paragraph (e)(1) of this section to demonstrate compliance with the H_2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph (e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument required in paragraph (e)(1) of this section is used to demonstrate compliance with the H_2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).

(vi) The owner or operator of modified flare that meets all three criteria in paragraphs (a)(2)(vi)(A) through (C) of this section shall comply with the requirements of paragraphs (a)(2)(i) through (v) of this section no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans pursuant to §60.13(i) until the flare is in compliance with requirements of paragraphs (a)(2)(i) through (v) of this section.

(A) The flare was an affected facility subject to subpart J of this part prior to becoming an affected facility under §60.100a.

(B) The owner or operator had an approved alternative monitoring plan or plans pursuant to §60.13(i) for all fuel gases combusted in the flare.

(C) The flare did not have in place on or before September 12, 2012 an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases that is capable of complying with the requirements of paragraphs (a)(2)(i) through (v) of this section.

(3) The owner or operator of a fuel gas combustion device or flare is not required to comply with paragraph (a)(1) or (2) of this section for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the requirements in paragraphs (a)(3)(i) through (iv) of this section will be considered inherently low in sulfur content.

(i) Pilot gas for heaters and flares.

(ii) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.

(iii) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.

(iv) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in paragraph (b) of this section.

(4) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in paragraph (b)(3) of this section.

(b) *Exemption from H_2S monitoring requirements for low-sulfur fuel gas streams*. The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H_2S monitoring requirements in paragraph (a)(2) of this section for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs (a)(1) and (2) of this section until there are changes in operating conditions or stream composition.

(1) The owner or operator shall submit to the Administrator a written application for an exemption from monitoring. The application must contain the following information:

(i) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;

(ii) A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);

(iii) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;

(iv) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppm H_2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. The owner or operator shall use detector tubes (''length-of-stain tube'' type measurement) following the ''Gas Processors Association Standard 2377–86, Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes,'' 1986 Revision (incorporated by reference—see § 60.17), with ranges 0–10/0–100 ppm (N = 10/1) to test the applicant fuel gas stream for H_2S; and

(v) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H_2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (*e.g.*, the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H_2S content in the fuel gas stream going to the loading rack flare).

(2) The effective date of the exemption is the date of submission of the information required in paragraph (b)(1) of this section.

(3) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in paragraph (b)(3)(i), (b)(3)(ii), or (b)(3)(iii) of this section.

(i) If the operation change results in a sulfur content that is still within the

range of concentrations included in the original application, the owner or operator shall conduct an H_2S test on a grab sample and record the results as proof that the concentration is still within the range.

(ii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of paragraph (b)(1) of this section within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(iii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H_2S monitoring using daily stain sampling to demonstrate compliance. The owner or operator must begin monitoring according to the requirements in paragraphs (a)(1) or (a)(2) of this section as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H_2S concentration limit. The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H_2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

(c) *Process heaters complying with the NO_X concentration-based limit.* The owner or operator of a process heater subject to the NO_X emissions limit in §60.102a(g)(2) and electing to comply with the applicable emissions limit in §60.102a(g)(2)(i)(A), (g)(2)(ii)(A), (g)(2)(iii)(A) or (g)(2)(iv)(A) shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of NO_X emissions into the atmosphere according to the requirements in paragraphs (c)(1) through (5) of this section, except as provided in paragraph (c)(6) of this section. The monitor must include an O_2 monitor for correcting the data for excess air.

(1) Except as provided in paragraph (c)(6) of this section, the owner or operator shall install, operate and maintain each NO_X monitor according to Performance Specification 2 of Appendix B to part 60. The span value of this NO_X monitor must be between 2 and 3 times the applicable emissions limit, inclusive.

(2) The owner or operator shall conduct performance evaluations of each NO_X monitor according to the requirements in §60.13(c) and Performance Specification 2 of appendix B to part 60. The owner or operator shall use Methods 7, 7A, 7C, 7D, or 7E of appendix A–4 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 7 or 7C of appendix A–4 to part 60.

(3) The owner or operator shall install, operate, and maintain each O_2 monitor according to Performance Specification 3 of appendix B to part 60. The span value of this O_2 monitor must be selected between 10 and 25 percent, inclusive.

(4) The owner or operator shall conduct performance evaluations of each O_2 monitor according to the requirements in §60.13(c) and Performance Specification 3 of appendix B to part 60. Method 3, 3A, or 3B of appendix A–2 to part 60 shall be used for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses,'' (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 3B of appendix A–2 to part 60.

(5) The owner or operator shall comply with the quality assurance requirements in Procedure 1 of appendix F to part 60 for each NO_X and O_2 monitor, including quarterly accuracy determinations for NO_X monitors, annual accuracy determinations for O_2 monitors, and daily calibration drift tests.

(6) The owner or operator of a process heater that has a rated heating capacity of less than 100 MMBtu and is equipped with combustion modification-based technology to reduce NO_X emissions (*i.e.*, low-NO_X burners, ultra-

low-NO_X burners) may elect to comply with the monitoring requirements in paragraphs (c)(1) through (5) of this section or, alternatively, the owner or operator of such a process heater shall conduct biennial performance tests according to the requirements in § 60.104a(i), establish a maximum excess O_2 operating limit or operating curve according to the requirements in § 60.104a(i)(6) and comply with the O_2 monitoring requirements in paragraphs (c)(3) through (5) of this section to demonstrate compliance. If an O_2 operating curve is used (*i.e.*, if different O_2 operating limits are established for different operating ranges), the owner or operator of the process heater must also monitor fuel gas flow rate, fuel oil flow rate (as applicable) and heating value content according to the methods provided in paragraphs (d)(5), (d)(6), and (d)(4) or (d)(7) of this section, respectively.

(d) *Process heaters complying with the NO_X heating value-based or mass-based limit.* The owner or operator of a process heater subject to the NO_X emissions limit in § 60.102a(g)(2) and electing to comply with the applicable emissions limit in § 60.102a(g)(2)(i)(B) or (g)(2)(ii)(B) shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of NO_X emissions into the atmosphere and shall determine the F factor of the fuel gas stream no less frequently than once per day according to the monitoring requirements in paragraphs (d)(1) through (4) of this section. The owner or operator of a co-fired process heater subject to the NO_X emissions limit in § 60.102a(g)(2) and electing to comply with the heating value-based limit in § 60.102a(g)(2)(iii)(B) or (g)(2)(iv)(B) shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of NO_X emissions into the atmosphere according to the monitoring requirements in paragraph (d)(1) of this section; install, operate, calibrate and maintain an instrument for continuously monitoring and recording the flow rate of the fuel gas and fuel oil fed to the process heater according to the monitoring requirements in paragraph (d)(5) and (6) of this section; for fuel gas streams, determine gas composition according to the requirements in paragraph (d)(4) of this section or the higher heating value according to the requirements in paragraph (d)(7) of this section; and for fuel oil streams, determine the heating value according to the monitoring requirements in paragraph (d)(7) of this section.

(1) Except as provided in paragraph (d)(8) of this section, the owner or operator shall install, operate and maintain each NO_X monitor according to the requirements in paragraphs (c)(1) through (5) of this section. The monitor must include an O_2 monitor for correcting the data for excess air.

(2) Except as provided in paragraph (d)(3) of this section, the owner or operator shall sample and analyze each fuel stream fed to the process heater using the methods and equations in section 12.3.2 of EPA Method 19 of Appendix A–7 to part 60 to determine the F factor on a dry basis. If a single fuel gas system provides fuel gas to several process heaters, the F factor may be determined at a single location in the fuel gas system provided it is representative of the fuel gas fed to the affected process heater(s).

(3) As an alternative to the requirements in paragraph (d)(2) of this section, the owner or operator of a gas-fired process heater shall install, operate and maintain a gas composition analyzer and determine the average F factor of the fuel gas using the factors in Table 1 of this subpart and Equation 10 of this section. If a single fuel gas system provides fuel gas to several process heaters, the F factor may be determined at a single location in the fuel gas system provided it is representative of the fuel gas fed to the affected process heater(s).

$$F_d = \frac{1{,}000{,}000 \times \sum \left(X_i \times MEV_i \right)}{\sum \left(X_i \times MHC_i \right)} \qquad \text{(Eq. 10)}$$

Where:

F_d = F factor on dry basis at 0-percent excess air, dscf/MMBtu.

X_i = mole or volume fraction of each component in the fuel gas.

MEV_i = molar exhaust volume, dry standard cubic feet per mole (dscf/mol).

MHC_i = molar heat content, Btu per mole (Btu/mol).

1,000,000 = unit conversion, Btu per MMBtu.

(4) The owner or operator shall conduct performance evaluations of each compositional monitor according to the requirements in Performance Specification 9 of Appendix B to part 60. Any of the following methods shall be used for conducting the relative accuracy evaluations:

(i) EPA Method 18 of Appendix A–6 to part 60;

(ii) ASTM D1945–03 (Reapproved 2010)(incorporated by reference-see §60.17);

(iii) ASTM D1946–90 (Reapproved 2006)(incorporated by reference-see §60.17);

(iv) ASTM D6420–99 (Reapproved 2004)(incorporated by reference-see §60.17);

(v) GPA 2261–00 (incorporated by reference-see §60.17); or

(vi) ASTM UOP539–97 (incorporated by reference-see §60.17).

(5) The owner or operator shall install, operate and maintain fuel gas flow monitors according to the manufacturer's recommendations. For volumetric flow meters, temperature and pressure monitors must be installed in conjunction with the flow meter or in a representative location to correct the measured flow to standard conditions (*i.e.*, 68 °F and 1 atmosphere). For mass flow meters, use gas compositions determined according to paragraph (d)(4) of this section to determine the average molecular weight of the fuel gas and convert the mass flow to a volumetric flow at standard conditions (*i.e.*, 68 °F and 1 atmosphere). The owner or operator shall conduct performance evaluations of each fuel gas flow monitor according to the requirements in §60.13 and Performance Specification 6 of Appendix B to part 60. Any of the following methods shall be used for conducting the relative accuracy evaluations:

(i) EPA Method 2, 2A, 2B, 2C or 2D of Appendix A–2 to part 60;

(ii) ASME MFC–3M–2004 (incorporated by reference-see §60.17);

(iii) ANSI/ASME MFC–4M–1986 (Reaffirmed 2008) (incorporated by reference-see §60.17);

(iv) ASME MFC–6M–1998 (Reaffirmed 2005) (incorporated by reference-see §60.17);

(v) ASME/ANSI MFC–7M–1987 (Reaffirmed 2006) (incorporated by reference-see §60.17);

(vi) ASME MFC–11M–2006 (incorporated by reference-see §60.17);

(vii) ASME MFC–14M–2003 (incorporated by reference-see §60.17);

(viii) ASME MFC–18M–2001 (incorporated by reference-see §60.17);

(ix) AGA Report No. 3, Part 1 (incorporated by reference-see §60.17);

(x) AGA Report No. 3, Part 2 (incorporated by reference-see §60.17);

(xi) AGA Report No. 11 (incorporated by reference-see §60.17);

(xii) AGA Report No. 7 (incorporated by reference-see §60.17); and

(xiii) API Manual of Petroleum Measurement Standards, Chapter 22, Section 2 (incorporated by reference-see §60.17).

(6) The owner or operator shall install, operate and maintain each fuel oil flow monitor according to the manufacturer's recommendations. The owner or operator shall conduct performance evaluations of each fuel oil flow monitor according to the requirements in §60.13 and Performance Specification 6 of Appendix B to part 60. Any of the following methods shall be used for conducting the relative accuracy evaluations:

(i) Any one of the methods listed in paragraph (d)(5) of this section that are applicable to fuel oil (*i.e.*, ''fluids'');

(ii) ANSI/ASME–MFC–5M–1985 (Reaffirmed 2006) (incorporated by reference-see § 60.17);

(iii) ASME/ANSI MFC–9M–1988 (Reaffirmed 2006) (incorporated by reference-see § 60.17);

(iv) ASME MFC–16–2007 (incorporated by reference-see § 60.17);

(v) ASME MFC–22–2007 (incorporated by reference-see § 60.17); or

(vi) ISO 8316 (incorporated by reference-see § 60.17).

(7) The owner or operator shall determine the higher heating value of each fuel fed to the process heater using any of the applicable methods included in paragraphs (d)(7)(i) through (ix) of this section. If a common fuel supply system provides fuel gas or fuel oil to several process heaters, the higher heating value of the fuel in each fuel supply system may be determined at a single location in the fuel supply system provided it is representative of the fuel fed to the affected process heater(s). The higher heating value of each fuel fed to the process heater must be determined no less frequently than once per day except as provided in paragraph (d)(7)(x) of this section.

(i) ASTM D240–02 (Reapproved 2007) (incorporated by reference-see § 60.17).

(ii) ASTM D1826–94 (Reapproved 2003) (incorporated by reference-see § 60.17).

(iii) ASTM D1945–03 (Reapproved 2010) (incorporated by reference-see § 60.17).

(iv) ASTM D1946–90 (Reapproved 2006) (incorporated by reference-see § 60.17).

(v) ASTM D3588–98 (Reapproved 2003) (incorporated by reference-see § 60.17).

(vi) ASTM D4809–06 (incorporated by reference-see § 60.17).

(vii) ASTM D4891–89 (Reapproved 2006) (incorporated by reference-see § 60.17).

(viii) GPA 2172–09 (incorporated by reference-see § 60.17).

(ix) Any of the methods specified in section 2.2.7 of Appendix D to part 75.

(x) If the fuel oil supplied to the affected co-fired process heater originates from a single storage tank, the owner or operator may elect to use the storage tank sampling method in section 2.2.4.2 of Appendix D to part 75 instead of daily sampling, except that the most recent value for heating content must be used.

(8) The owner or operator of a process heater that has a rated heating capacity of less than 100 MMBtu and is equipped with combustion modification based technology to reduce NO_X emissions (*i.e.*, low-NO_X burners or ultra-low NO_X burners) may elect to comply with the monitoring requirements in paragraphs (d)(1) through (7) of this section or, alternatively, the owner or operator of such a process heater shall conduct biennial performance tests according to the requirements in § 60.104a(i), establish a maximum excess O_2 operating limit or operating curve according to the requirements in § 60.104a(i)(6) and comply with the O_2 monitoring requirements in paragraphs (c)(3) through (5) of this section to demonstrate compliance. If an O_2 operating curve is used (*i.e.*, if different O_2 operating limits are established for different operating ranges), the owner or operator of the process heater must also monitor fuel gas flow rate, fuel oil flow rate (as applicable) and heating value content according to the methods provided in paragraphs (d)(5), (d)(6), and (d)(4) or (d)(7) of this section, respectively.

(e) *Sulfur monitoring for assessing root cause analysis threshold for affected flares.* Except as described in paragraphs (e)(4) and (h) of this section, the owner or operator of an affected flare subject to § 60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either paragraph (e)(1), (e)(2) or (e)(3) of this section. Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either paragraph (e)(1), (e)(2) or (e)(3) of this section, the owner or operator of a modified flare must comply with the requirements related to either paragraph (e)(1), (e)(2) or (e)(3) of this section upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either paragraph (e)(1), (e)(2) or (e)(3) of this section, the owner or operator of a modified flare must comply with the requirements related to either paragraph (e)(1), (e)(2) or (e)(3) of this section no later than November 11, 2015 or

upon startup of the modified flare, whichever is later.

(1) *Total reduced sulfur monitoring requirements.* The owner or operator shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(i) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of Appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (*e.g.*, roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this paragraph and paragraph (a)(2) of this section provided the applicable span specifications are met.

(ii) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of Appendix B to part 60. For flares that routinely have flow, the owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of Appendix A–5 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of Appendix A–5 to part 60. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of Appendix B to part 60 (cylinder gas audits) may be used for conducting the relative accuracy evaluations. For flares that do not receive routine flow, the alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of Appendix B to part 60 (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in Appendix F to part 60 for each total reduced sulfur monitor.

(2) *H_2S monitoring requirements.* The owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of H_2S in gas discharged to the flare according to the requirements in paragraphs (e)(2)(i) through (iii) of this section and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in paragraphs (e)(2)(iv) through (ix) of this section.

(i) The owner or operator shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of Appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (*e.g.*, roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H_2S monitor may be used to comply with the requirements of this paragraph and paragraph (a)(2) of this section provided the applicable span specifications are met.

(ii) The owner or operator shall conduct performance evaluations of each H_2S monitor according to the requirements in §60.13(c) and Performance Specification 7 of Appendix B to part 60. For flares that routinely have flow, the owner or operator shall use EPA Method 11, 15 or 15A of Appendix A–5 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10–1981 (incorporated by reference—see §60.17) is an acceptable alternative to EPA Method 15A of Appendix A–5 to part 60. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of Appendix B to part 60 (cylinder gas audits) may be used for conducting the relative accuracy evaluations. For flares that do not receive routine flow, the alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of Appendix B to part 60 (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in Appendix F to part 60 for each H_2S monitor.

(iv) In the first 10 operating days after the date the flare must begin to comply with § 60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in paragraph (e)(2)(ix) of this section.

(v) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of Appendix A–5 to part 60, EPA Method 16A of Appendix A–6 to part 60, ASTM Method D4468–85 (Reapproved 2006) (incorporated by reference—see § 60.17) or ASTM Method D5504–08 (incorporated by reference—see § 60.17).

(vi) The owner or operator shall develop a 10-day average total sulfur-to-H_2S ratio and 95-percent confidence interval as follows:

(A) Calculate the ratio of the total sulfur concentration to the H_2S concentration for each day during which samples are collected.

(B) Determine the 10-day average total sulfur-to-H_2S ratio as the arithmetic average of the daily ratios calculated in paragraph (e)(2)(vi)(A) of this section.

(C) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios basedon the 10 individual daily ratios using Equation 11 of this section.

$$AR = Ratio_{Avg} \pm 2.262 \times SDev \qquad \text{(Eq. 11)}$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

$Ratio_{Avg}$ = 10-day average total sulfur-to-H_2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H_2S concentration ratios used to develop the 10-day average total sulfur-to-H_2S concentration ratio, unitless.

(vii) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the total sulfur concentration using the measured total sulfur concentration measured for that day.

(viii) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H_2S ratio by the daily average H_2S concentrations obtained using the monitor as required by paragraph (e)(2)(i) through (iii) of this section to estimate total sulfur concentrations.

(ix) If the total sulfur-to-H_2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(3) *SO_2 monitoring requirements.* The owner or operator shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration of SO_2 from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of this section, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of this section, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of this section and calculate the total sulfur content (as SO_2) in the fuel gas using Equation 12 of this section.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG} \qquad \text{(Eq. 12)}$$

Where:

TS_{FG} = Total sulfur concentration, as SO_2, in the fuel gas, ppmv.

C_{SO2} = Concentration of SO_2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

F_d = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHV_{FG} = Higher heating value of the fuel gas, MMBtu/scf.

(4) *Exemptions from sulfur monitoring requirements.* Flares identified in paragraphs (e)(4)(i) through (iv) of this section are exempt from the requirements in paragraphs (e)(1) through (3) of this section. For each such flare, except as provided in paragraph (e)(4)(iv), engineering calculations shall be used to calculate the SO_2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1).

(i) Flares that can only receive:

(A) Fuel gas streams that are inherently low in sulfur content as described in paragraph (a)(3)(i) through (iv) of this section; and/or

(B) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H_2S monitoring requirements as described in paragraph (b) of this section.

(ii) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in paragraph (g) of this section.

(iii) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in paragraph (g) of this section.

(iv) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO_2 emissions, regardless of whether or not the monitoring alternative in paragraph (g) of this section is selected for the secondary flare.

(f) *Flow monitoring for flares.* Except as provided in paragraphs (f)(2) and (h) of this section, the owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in paragraph (f)(1) of this section, a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later.

(1) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.

(i) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.

(ii) Use a flow sensor with a measurement sensitivity of no more than 5 percent of the flow rate or 10 cubic feet per minute, whichever is greater.

(iii) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.

(iv) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.

(v) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

(2) Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any

such flare, the owner or operator shall comply with the monitoring alternative in paragraph (g) of this section.

(g) *Alternative monitoring for certain flares equipped with water seals.* The owner or operator of an affected flare subject to § 60.103a(c) through (e) that can be classified as either an emergency flare, a secondary flare or a flare equipped with a flare gas recovery system designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction may, as an alternative to the sulfur and flow monitoring requirements of paragraphs (e) and (f) of this section, install, operate, calibrate and maintain, in accordance with the requirements in paragraphs (g)(1) through (7) of this section, a CPMS to measure and record the pressure in the flare gas header between the knock-out pot and water seal and to measure and record the water seal liquid level. If the required monitoring systems are not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later.

(1) Locate the pressure sensor(s) in a position that provides a representative measurement of the pressure and locate the liquid seal level monitor in a position that provides a representative measurement of the water column height.

(2) Minimize or eliminate pulsating pressure, vibration and internal and external corrosion.

(3) Use a pressure sensor and level monitor with a minimum tolerance of 1.27 centimeters of water.

(4) Using a manometer, check pressure sensor calibration quarterly.

(5) Conduct calibration checks any time the pressure sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.

(6) In a cascaded flare system that employs multiple secondary flares, pressure and liquid level monitoring is required only on the first secondary flare in the system (*i.e.*, the secondary flare with the lowest pressure release set point).

(7) This alternative monitoring option may be elected only for flares with four or fewer pressure exceedances required to be reported under § 60.108a(d)(5) (''reportable pressure exceedances'') in any 365 consecutive calendar days. Following the fifth reportable pressure exceedance in a 365-day period, the owner or operator must comply with the sulfur and flow monitoring requirements of paragraphs (e) and (f) of this section as soon as practical, but no later than 180 days after the fifth reportable pressure exceedance in a 365-day period.

(h) *Alternative monitoring for flares located in the BAAQMD or SCAQMD.* An affected flare subject to this subpart located in the BAAQMD may elect to comply with the monitoring requirements in both BAAQMD Regulation 12, Rule 11 and BAAQMD Regulation 12, Rule 12 as an alternative to complying with the requirements of paragraphs (e) and (f) of this section. An affected flare subject to this subpart located in the SCAQMD may elect to comply with the monitoring requirements in SCAQMD Rule 1118 as an alternative to complying with the requirements of paragraphs (e) and (f) of this section.

(i) *Excess emissions.* For the purpose of reports required by § 60.7(c), periods of excess emissions for fuel gas combustion devices subject to the emissions limitations in § 60.102a(g) and flares subject to the concentration requirement in § 60.103a(h) are defined as specified in paragraphs (i)(1) through (5) of this section. Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (*e.g.*, a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (*e.g.*, a rolling 30-day average is the arithmetic average of 30 contiguous daily averages).

(1) *SO_2 or H_2S limits for fuel gas combustion devices.* (i) If the owner or operator of a fuel gas combustion device elects to comply with the SO_2 emission limits in § 60.102a(g)(1)(i), each rolling 3-hour period during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system required under paragraph (a)(1) of this

section exceeds 20 ppmv, and each rolling 365-day period during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system required under paragraph (a)(1) of this section exceeds 8 ppmv.

(ii) If the owner or operator of a fuel gas combustion device elects to comply with the H_2S concentration limits in §60.102a(g)(1)(ii), each rolling 3-hour period during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under paragraph (a)(2) of this section exceeds 162 ppmv and each rolling 365-day period during which the average concentration as measured by the H_2S continuous monitoring system under paragraph (a)(2) of this section exceeds 60 ppmv.

(iii) If the owner or operator of a fuel gas combustion device becomes subject to the requirements of daily stain tube sampling in paragraph (b)(3)(iii) of this section, each day during which the daily concentration of H_2S exceeds 162 ppmv and each rolling 365-day period during which the average concentration of H_2S exceeds 60 ppmv.

(2) H_2S concentration limits for flares. (i) Each rolling 3-hour period during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under paragraph (a)(2) of this section exceeds 162 ppmv.

(ii) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in paragraph (b)(3)(iii) of this section, each day during which the daily concentration of H_2S exceeds 162 ppmv.

(3) *Rolling 30-day average NO_X limits for fuel gas combustion devices.* Each rolling 30-day period during which the average concentration of NO_X as measured by the NO_X continuous monitoring system required under paragraph (c) or (d) of this section exceeds:

(i) For a natural draft process heater, 40 ppmv and, if monitored according to §60.107a(d), 0.040 lb/MMBtu;

(ii) For a forced draft process heater, 60 ppmv and, if monitored according to §60.107a(d), 0.060 lb/MMBtu; and

(iii) For a co-fired process heater electing to comply with the NO_X limit in §60.102a(g)(2)(iii)(A) or (g)(2)(iv)(A), 150 ppmv.

(iv) The site-specific limit determined by the Administrator under §60.102a(i).

(4) *Daily NO_X limits for fuel gas combustion devices.* Each day during which the concentration of NO_X as measured by the NO_X continuous monitoring system required under paragraph (d) of this section exceeds the daily average emissions limit calculated using Equation 3 in §60.102a(g)(2)(iii)(B) or Equation 4 in §60.102a(g)(2)(iv)(B).

(5) *Daily O_2 limits for fuel gas combustion devices.* Each day during which the concentration of O_2 as measured by the O_2 continuous monitoring system required under paragraph (c)(6) of this section exceeds the O_2 operating limit or operating curve determined during the most recent biennial performance test.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56473, Sep. 12, 2012]

§60.108a Recordkeeping and reporting requirements.

(a) Each owner or operator subject to the emissions limitations in §60.102a shall comply with the notification, recordkeeping, and reporting requirements in §60.7 and other requirements as specified in this section.

(b) Each owner or operator subject to an emissions limitation in §60.102a shall notify the Administrator of the specific monitoring provisions of §§60.105a, 60.106a and 60.107a with which the owner or operator intends to comply. Each owner or operator of a co-fired process heater subject to an emissions limitation in §60.102a(g)(2)(iii) or (iv) shall submit to the Administrator documentation showing that the process heater meets the definition of a co-fired process heater in §60.101a. Notifications required by this paragraph shall be submitted with the notification of initial startup required by §60.7(a)(3).

(c) The owner or operator shall maintain the following records:

(1) A copy of the flare management plan.

(2) Records of information to document conformance with bag leak detection system operation and maintenance requirements in §60.105a(c).

(3) Records of bag leak detection system alarms and actions according to § 60.105a(c).

(4) For each FCCU and fluid coking unit subject to the monitoring requirements in § 60.105a(b)(1), records of the average coke burn-off rate and hours of operation.

(5) For each fuel gas stream to which one of the exemptions listed in § 60.107a(a)(3) applies, records of the specific exemption determined to apply for each fuel stream. If the owner or operator applies for the exemption described in § 60.107a(a)(3)(iv), the owner or operator must keep a copy of the application as well as the letter from the Administrator granting approval of the application.

(6) Records of discharges greater than 500 lb SO_2 in any 24-hour period from any affected flare, discharges greater than 500 lb SO_2 in excess of the allowable limits from a fuel gas combustion device or sulfur recovery plant and discharges to an affected flare in excess of 500,000 scf above baseline in any 24-hour period as required by § 60.103a(c). If the monitoring alternative provided in § 60.107a(g) is selected, the owner or operator shall record any instance when the flare gas line pressure exceeds the water seal liquid depth, except for periods attributable to compressor staging that do not exceed the staging time specified in § 60.103a(a)(3)(vii)(C). The following information shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds:

(i) A description of the discharge.

(ii) The date and time the discharge was first identified and the duration of the discharge.

(iii) The measured or calculated cumulative quantity of gas discharged over the discharge duration. If the discharge duration exceeds 24 hours, record the discharge quantity for each 24-hour period. For a flare, record the measured or calculated cumulative quantity of gas discharged to the flare over the discharge duration. If the discharge duration exceeds 24 hours, record the quantity of gas discharged to the flare for each 24-hour period. Engineering calculations are allowed for fuel gas combustion devices, but are not allowed for flares, except for those complying with the alternative monitoring requirements in § 60.107a(g).

(iv) For each discharge greater than 500 lb SO_2 in any 24-hour period from a flare, the measured total sulfur concentration or both the measured H_2S concentration and the estimated total sulfur concentration in the fuel gas at a representative location in the flare inlet.

(v) For each discharge greater than 500 lb SO_2 in excess of the applicable short-term emissions limit in § 60.102a(g)(1) from a fuel gas combustion device, either the measured concentration of H_2S in the fuel gas or the measured concentration of SO_2 in the stream discharged to the atmosphere. Process knowledge can be used to make these estimates for fuel gas combustion devices, but cannot be used to make these estimates for flares, except as provided in § 60.107a(e)(4).

(vi) For each discharge greater than 500 lb SO_2 in excess of the allowable limits from a sulfur recovery plant, either the measured concentration of reduced sulfur or SO_2 discharged to the atmosphere.

(vii) For each discharge greater than 500 lb SO_2 in any 24-hour period from any affected flare or discharge greater than 500 lb SO_2 in excess of the allowable limits from a fuel gas combustion device or sulfur recovery plant, the cumulative quantity of H_2S and SO_2 released into the atmosphere. For releases controlled by flares, assume 99-percent conversion of reduced sulfur or total sulfur to SO_2. For fuel gas combustion devices, assume 99-percent conversion of H_2S to SO_2.

(viii) The steps that the owner or operator took to limit the emissions during the discharge.

(ix) The root cause analysis and corrective action analysis conducted as required in § 60.103a(d), including an identification of the affected facility, the date and duration of the discharge, a statement noting whether the discharge resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under § 60.103a(e).

(x) For any corrective action analysis for which corrective actions are required in §60.103a(e), a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(xi) For each discharge from any affected flare that is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare, a statement that a root cause analysis and corrective action analysis are not necessary because the owner or operator followed the flare management plan.

(7) If the owner or operator elects to comply with §60.107a(e)(2) for a flare, records of the H_2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H_2S ratios, the calculated 10-day average total sulfur-to-H_2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H_2S ratio.

(d) Each owner or operator subject to this subpart shall submit an excess emissions report for all periods of excess emissions according to the requirements of §60.7(c) except that the report shall contain the information specified in paragraphs (d)(1) through (7) of this section.

(1) The date that the exceedance occurred;

(2) An explanation of the exceedance;

(3) Whether the exceedance was concurrent with a startup, shutdown, or malfunction of an affected facility or control system; and

(4) A description of the action taken, if any.

(5) The information described in paragraph (c)(6) of this section for all discharges listed in paragraph (c)(6) of this section. For a flare complying with the monitoring alternative under §60.107a(g), following the fifth discharge required to be recorded under paragraph (c)(6) of this section and reported under this paragraph, the owner or operator shall include notification that monitoring systems will be installed according to §60.107a(e) and (f) within 180 days following the fifth discharge.

(6) For any periods for which monitoring data are not available, any changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(7) A written statement, signed by a responsible official, certifying the accuracy and completeness of the information contained in the report.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56479, Sep. 12, 2012]

§60.109a Delegation of authority.

(a) This subpart can be implemented and enforced by the U.S. EPA or a delegated authority such as a State, local, or tribal agency. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency within your State.

(b) In delegating implementation and enforcement authority of this subpart to a state, local or tribal agency, the approval authorities contained in paragraphs (b)(1) through (4) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the state, local or tribal agency.

(1) Approval of a major change to test methods under §60.8(b). A ''major change to test method'' is defined in 40 CFR 63.90.

(2) Approval of a major change to monitoring under §60.13(i). A ''major change to monitoring'' is defined in 40 CFR 63.90.

(3) Approval of a major change to recordkeeping/reporting under §60.7(b) through (f). A ''major change to recordkeeping/reporting'' is defined in 40 CFR 63.90.

(4) Approval of an application for an alternative means of emission limitation under §60.103a(j) of this subpart.

[73 FR 35867, June 24, 2008, as amended at 77 FR 56480, Sep. 12, 2012]

TABLE 1 TO SUBPART JA OF PART 60—MOLAR EXHAUST VOLUMES AND MOLAR HEAT CONTENT OF FUEL GAS CONSTITUENTS

Constituent	MEV[a] dscf/mol	MHC[b] Btu/mol
Methane (CH_4)	7.29	842
Ethane (C_2H_6)	12.96	1,475
Hydrogen (H_2)	1.61	269
Ethene (C_2H_4)	11.34	1,335
Propane (C_3H_8)	18.62	2,100
Propene (C_3H_6)	17.02	1,947
Butane (C_4H_{10})	24.30	2,717
Butene (C_4H_8)	22.69	2,558
Inerts	0.85	0

[a] MEV = molar exhaust volume, dry standard cubic feet per gram-mole (dscf/g-mol) at standard conditions of 68 °F and 1 atmosphere.

[b] MHC = molar heat content (higher heating value basis), Btu per gram-mole (Btu/g-mol).

[77 FR 56480, Sep. 12, 2012]

Subpart K—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978

§ 60.110 Applicability and designation of affected facility.

(a) Except as provided in § 60.110(b), the affected facility to which this subpart applies is each storage vessel for petroleum liquids which has a storage capacity greater than 151,412 liters (40,000 gallons).

(b) This subpart does not apply to storage vessels for petroleum or condensate stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

(c) Subject to the requirements of this subpart is any facility under paragraph (a) of this section which:

(1) Has a capacity greater than 151, 416 liters (40,000 gallons), but not exceeding 246,052 liters (65,000 gallons), and commences construction or modification after March 8, 1974, and prior to May 19, 1978.

(2) Has a capacity greater than 246,052 liters (65,000 gallons) and commences construction or modification after June 11, 1973, and prior to May 19, 1978.

[42 FR 37937, July 25, 1977, as amended at 45 FR 23379, Apr. 4, 1980]

§ 60.111 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Storage vessel* means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396–78, 89, 90, 92, 96, or 98, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880–78 or 96, or diesel fuel oils Nos. 2–D and 4–D as specified in ASTM D975–78, 96, or 98a. (These three methods are incorporated by reference—see § 60.17.)

(c) *Petroleum refinery* means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

(d) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(e) *Hydrocarbon* means any organic compound consisting predominantly of carbon and hydrogen.

(f) *Condensate* means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(g) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(h) *Drilling and production facility* means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary nontransportation-related equipment used in the production of petroleum but does not include natural gasoline plants.

(i) *True vapor pressure* means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from External Floating-Roof Tanks, Second Edition, February 1980 (incorporated by reference—see § 60.17).

(j) *Floating roof* means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(k) *Vapor recovery system* means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(l) *Reid vapor pressure* is the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see § 60.17).

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 39 FR 20794, June 14, 1974; 45 FR 23379, Apr. 4, 1980; 48 FR 3737, Jan. 27, 1983; 52 FR 11429, Apr. 8, 1987; 65 FR 61755, Oct. 17, 2000]

§ 60.112 Standard for volatile organic compounds (VOC).

(a) The owner or operator of any storage vessel to which this subpart applies shall store petroleum liquids as follows:

(1) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 45 FR 23379, Apr. 4, 1980]

§ 60.113 Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each affected facility which stores petroleum liquids with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) Each owner or operator of each affected facility equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112.

[45 FR 23379, Apr. 4, 1980]

Subpart Ka—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

§ 60.110a Applicability and designation of affected facility.

(a) *Affected facility*. Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a storage capacity greater than 151,416 liters (40,000 gallons) that is used to store petroleum liquids for which construction is commenced after May 18, 1978.

(b) Each petroleum liquid storage vessel with a capacity of less than 1,589,873 liters (420,000 gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer is not an affected facility and, therefore, is exempt from the requirements of this subpart.

(c) *Alternative means of compliance*—(1) *Option to comply with part 65*. Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§ 60.112a through 60.114a for storage vessels that are subject to this subpart that store petroleum liquids that, as stored, have a maximum true vapor pressure equal to or greater than 10.3 kPa (1.5 psia). Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A*. Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (c)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

[45 FR 23379, Apr. 4, 1980, as amended at 65 FR 78275, Dec. 14, 2000]

§ 60.111a Definitions.

In addition to the terms and their definitions listed in the Act and subpart A of this part the following definitions apply in this subpart:

(a) *Storage vessel* means each tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 204.9 kPa (15 psig) without emissions to the atmosphere except under emergency conditions.

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396–78, 89, 90, 92, 96, or 98, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880–78 or 96, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880–78 or 96, or diesel fuel oils Nos. 2–D and 4–D as specified in ASTM D975–78, 96, or 98a. (These three methods are incorporated by reference—see § 60.17.)

(c) *Petroleum refinery* means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

(d) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(e) *Condensate* means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(f) *True vapor pressure* means the equilibrium partial pressure exerted by a petroleum liquid such as determined

in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from External Floating-Roof Tanks, Second Edition, February 1980 (incorporated by reference—see §60.17).

(g) *Reid vapor pressure* is the absolute vapor pressure of volatile crude oil and nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see §60.17).

(h) *Liquid-mounted seal* means a foam or liquid-filled primary seal mounted in contact with the liquid between the tank wall and the floating roof continuously around the circumference of the tank.

(i) *Metallic shoe seal* includes but is not limited to a metal sheet held vertically against the tank wall 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.

(j) *Vapor-mounted seal* means a foam-filled primary seal mounted continuously around the circumference of the tank so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

(k) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

[45 FR 23379, Apr. 4, 1980, as amended at 48 FR 3737, Jan. 27, 1983; 52 FR 11429, Apr. 8, 1987; 65 FR 61756, Oct. 17, 2000]

§60.112a Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel to which this subpart applies which contains a petroleum liquid which, as stored, has a true vapor pressure equal to or greater than 10.3 kPa (1.5 psia) but not greater than 76.6 kPa (11.1 psia) shall equip the storage vessel with one of the following:

(1) An external floating roof, consisting of a pontoon-type or double-deck-type cover that rests on the surface of the liquid contents and is equipped with a closure device between the tank wall and the roof edge. Except as provided in paragraph (a)(1)(ii)(D) 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. The roof is to be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill and when the tank 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.

(i) The primary seal is to be either a metallic shoe seal, a liquid-mounted seal, or a vapor-mounted seal. Each seal is to meet the following requirements:

(A) The accumulated area of gaps between the tank wall and the metallic shoe seal or the liquid-mounted seal shall not exceed 212 cm^2 per meter of tank diameter (10.0 in^2 per ft of tank diameter) and the width of any portion of any gap shall not exceed 3.81 cm (1½ in).

(B) The accumulated area of gaps between the tank wall and the vapor-mounted seal shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 in^2 per ft of tank diameter) and the width of any portion of any gap shall not exceed 1.27 cm (½ in).

(C) 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.

(D) 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 tank wall except as provided in paragraph (a)(1)(ii)(B) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed 21.2 cm^2 per meter of

tank diameter (1.0 in^2 per ft. of tank diameter) and the width of any portion of any gap shall not exceed 1.27 cm (½ in.). There shall be no gaps between the tank wall and the secondary seal used in combination with a vapor-mounted primary seal.

(C) There are to be no holes, tears or other openings in the seal or seal fabric.

(D) The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.

(iii) Each opening in the roof except for automatic bleeder vents and rim space vents is to provide a projection below the liquid surface. Each opening in the roof except for automatic bleeder vents, rim space vents and leg sleeves is to be equipped with a 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 or as described in pargraph (a)(1)(iv) of this section. 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 legs supports or at the manufacturer's recommended setting.

(iv) 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.

(2) A fixed roof with an internal floating type cover equipped with a continuous closure device between the tank wall and the cover edge. The cover is to be floating at all times, (i.e., off the leg supports) except during initial fill and when the tank is completely emptied and subsequently refilled. The process of emptying and refilling when the cover is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. Each opening in the cover except for automatic bleeder vents and the rim space vents is to provide a projection below the liquid surface. Each opening in the cover except for automatic bleeder vents, rim space vents, stub drains and leg sleeves is to be equipped with a 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 cover is floating except when the cover is being floated off or is being landed on the leg supports. Rim vents are to be set to open only when the cover is being floated off the leg supports or at the manufacturer's recommended setting.

(3) A vapor recovery system which collects all VOC vapors and gases discharged from the storage vessel, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emission to the atmosphere by at least 95 percent by weight.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114a.

(b) The owner or operator of each storage vessel to which this subpart applies which contains a petroleum liquid which, as stored, has a true vapor pressure greater than 76.6 kPa (11.1 psia), shall equip the storage vessel with a vapor recovery system which collects all VOC vapors and gases discharged from the storage vessel, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emission to the atmosphere by at least 95 percent by weight.

[45 FR 23379, Apr. 4, 1980, as amended at 45 FR 83229, Dec. 18, 1980]

§ 60.113a Testing and procedures.

(a) Except as provided in § 60.8(b) compliance with the standard prescribed in § 60.112a shall be determined as follows or in accordance with an equivalent procedure as provided in § 60.114a.

(1) The owner or operator of each storage vessel to which this subpart applies which has an external floating roof shall meet the following requirements:

(i) Determine the gap areas and maximum gap widths between the primary seal and the tank wall and between the

secondary seal and the tank wall according to the following frequency:

(A) For primary seals, gap measurements shall be performed within 60 days of the initial fill with petroleum liquid and at least once every five years thereafter. All primary seal inspections or gap measurements which require the removal or dislodging of the secondary seal shall be accomplished as rapidly as possible and the secondary seal shall be replaced as soon as possible.

(B) For secondary seals, gap measurements shall be performed within 60 days of the initial fill with petroleum liquid and at least once every year thereafter.

(C) If any storage vessel is out of service for a period of one year or more, subsequent refilling with petroleum liquid shall be considered initial fill for the purposes of paragraphs (a)(1)(i)(A) and (a)(1)(i)(B) of this section.

(D) Keep records of each gap measurement at the plant for a period of at least 2 years following the date of measurement. Each record shall identify the vessel on which the measurement was performed and shall contain the date of the seal gap measurement, the raw data obtained in the measurement process required by paragraph (a)(1)(ii) of this section and the calculation required by paragraph (a)(1)(iii) of this section.

(E) If either the seal gap calculated in accord with paragraph (a)(1)(iii) of this section or the measured maximum seal gap exceeds the limitations specified by §60.112a of this subpart, a report shall be furnished to the Administrator within 60 days of the date of measurements. The report shall identify the vessel and list each reason why the vessel did not meet the specifications of §60.112a. The report shall also describe the actions necessary to bring the storage vessel into compliance with the specifications of §60.112a.

(ii) Determine gap widths in the primary and secondary seals individually by the following procedures:

(A) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(B) Measure seal gaps around the entire circumference of the tank in each place where a ⅛″ diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the tank wall and measure the circumferential distance of each such location.

(C) The total surface area of each gap described in paragraph (a)(1)(ii)(B) of this section shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(iii) 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 tank and compare each ratio to the appropriate ratio in the standard in §60.112a(a)(1)(i) and §60.112a(a)(1)(ii).

(iv) Provide the Administrator 30 days prior notice of the gap measurement to afford the Administrator the opportunity to have an observer present.

(2) The owner or operator of each storage vessel to which this subpart applies which has a vapor recovery and return or disposal system shall provide the following information to the Administrator on or before the date on which construction of the storage vessel commences:

(i) Emission data, if available, for a similar vapor recovery and return or disposal system used on the same type of storage vessel, which can be used to determine the efficiency of the system. A complete description of the emission measurement method used must be included.

(ii) The manufacturer's design specifications and estimated emission reduction capability of the system.

(iii) The operation and maintenance plan for the system.

(iv) Any other information which will be useful to the Administrator in evaluating the effectiveness of the system in reducing VOC emissions.

[45 FR 23379, Apr. 4, 1980, as amended at 52 FR 11429, Apr. 8, 1987]

§ 60.114a Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in § 60.112a, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts 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.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112a.

(e) The primary vapor-mounted seal in the ''Volume-Maximizing Seal'' manufactured by R.F.I. Services Corporation is approved as equivalent to the vapor-mounted seal required by § 60.112a(a)(1)(i) and must meet the gap criteria specified in § 60.112a(a)(1)(i)(B). There shall be no gaps between the tank wall and any secondary seal used in conjunction with the primary seal in the ''Volume-Maximizing Seal''.

[52 FR 11429, Apr. 8, 1987]

§ 60.115a Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each storage vessel storing a petroleum liquid with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) The owner or operator of each storage vessel equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112a(a)(3) and (b), or a closed vent system and control device meeting the specifications of 40 CFR 65.42(b)(4), (b)(5), or (c).

[45 FR 23379, Apr. 4, 1980, as amended at 65 FR 78275, Dec. 14, 2000]

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

SOURCE: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility

to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

§60.111b Definitions.

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

Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be

limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see § 60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17);

(4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see § 60.17).

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;

(2) Subsurface caverns or porous rock reservoirs; or

(3) Process tanks.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less

than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed 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.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) 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 tank.

(B) 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.

(C) A mechanical shoe seal. A mechanical shoe seal is 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.

(iii) 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.

(iv) 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 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. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and 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.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) 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.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. 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. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. 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.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in §60.113b(b)(4), the seal shall completely

cover the annular space between the edge of the floating roof and tank wall.

(B) 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 § 60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a 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 that 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 legs 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.

(iii) 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 tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC 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 part 60, subpart VV, § 60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC 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 (§ 60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in § 60.114b of this subpart.

(c) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia (''site'').

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in § 60.112b(a)

shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) 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 VOL. 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, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, 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. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated 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, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). 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 assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) 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. 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 VOL. 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 inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, 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, 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.

(b) After installing the control equipment required to meet §60.112b(a)(2)

(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 between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) 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 tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against 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 tank 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 and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm 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 tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(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 paragraph (b)(1) of § 60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in § 60.115b(b)(4). 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) 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 VOL.

(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 the 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 tank, 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, 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 §60.112b (a)(3) or (b)(2) (other than a flare) is exempt from §60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by §60.7(a)(1) or, if the facility is exempt from §60.7(a)(1), as an attachment to the notification required by §60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC 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 will 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 will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of 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 review 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 §60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, §60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§60.114b Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in §60.112b, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts 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.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112b.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by § 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in §60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by §60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with §60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with §60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by §60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by §60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under §60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the

actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in § 60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17); or

(ii) ASTM D323–82 or 94 (incorporated by reference—see § 60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of § 60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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: §§ 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

Subpart L—Standards of Performance for Secondary Lead Smelters

§ 60.120 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary lead smelters: Pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.121 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Reverberatory furnace* includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(b) *Secondary lead smelter* means any facility producing lead from a leadbearing scrap material by smelting to the metallic form.

(c) *Lead* means elemental lead or alloys in which the predominant component is lead.

(d) *Blast furnace* means any furnace used to recover metal from slag.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 65 FR 61756, Oct. 17, 2000]

§ 60.122 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

[39 FR 9317, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.123 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.122 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of furnace operation, including charging and tapping. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

Subpart M—Standards of Performance for Secondary Brass and Bronze Production Plants

§ 60.130 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary brass or bronze production plants: Reverberatory and electric furnaces of 1,000 kg (2205 lb) or greater production capacity and blast (cupola) furnaces of 250 kg/h (550 lb/h) or greater production capacity. Furnaces from which molten brass or bronze are cast into the shape of finished products, such as foundry furnaces, are not considered to be affected facilities.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 49 FR 43618, Oct. 30, 1984]

§ 60.131 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Brass or bronze* means any metal alloy containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

(b) *Reverberatory furnace* includes the following types of reverberatory furnaces: Stationary, rotating, rocking, and tilting.

(c) *Electric furnace* means any furnace which uses electricity to produce over 50 percent of the heat required in the production of refined brass or bronze.

(d) *Blast furnace* means any furnace used to recover metal from slag.

[39 FR 9318, Mar. 8, 1974]

§ 60.132 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a reverberatory furnace any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any blast (cupola) or electric furnace any gases which exhibit 10 percent opacity or greater.

[39 FR 9318, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.133 Test methods and procedures.

(a) In conducting performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.132 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of charging and refining, but not during pouring of part of the production cycle. The sampling time and sample volume for each run shall be at least 120 minutes and 1.80 dscm (63.6 dscf).

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989, as amended at 65 FR 61756, Oct. 17, 2000]

Subpart N—Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973

§ 60.140 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each basic oxygen process furnace.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.141 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Basic oxygen process furnace (BOPF)* means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and introducing a high volume of oxygen-rich gas. Open hearth, blast, and reverberatory furnaces are not included in this definition.

(b) *Primary emissions* means particulate matter emissions from the BOPF generated during the steel production cycle and captured by the BOPF primary control system.

(c) *Primary oxygen blow* means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel or through tuyeres in the bottom or through the bottom and sides of the vessel. This definition does not include any additional or secondary oxygen blows made after the primary blow or the introduction of nitrogen or other inert gas through tuyeres in the bottom or bottom and sides of the vessel.

(d) *Steel production cycle* means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping, and deslagging. This definition applies to an affected facility constructed, modified, or reconstructed after January 20, 1983. For an affected facility constructed, modified, or reconstructed after June 11, 1973, but on or before January 20, 1983, *steel production cycle* means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap

charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), and tapping.

[39 FR 9318, Mar. 8, 1974, as amended at 51 FR 160, Jan. 2, 1986]

§ 60.142 Standard for particulate matter.

(a) Except as provided under paragraph (b) of this section, on and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exit from a control device and exhibit 10 percent opacity or greater, except that an opacity of greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(b) For affected facilities constructed, modified, or reconstructed after January 20, 1983, the following limits shall apply:

(1) On or after the date on which the performance test under § 60.8 is required to be completed, no owner or operator of an affected facility for which open hooding is the method for controlling primary emissions shall cause to be discharged to the atmosphere any gases that:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf), as measured for the primary oxygen blow.

(ii) Exit from a control device not used solely for the collection of secondary emissions, as defined in § 60.141a, and exhibit 10 percent opacity or greater, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(2) On or after the date on which the performance test required by § 60.8 is completed, no owner or operator of an affected facility for which closed hooding is the method for controlling primary emissions shall cause to be discharged into the atmosphere any gases that:

(i) Contain particulate matter in excess of 68 mg/dscm (0.030 gr/dscf), as measured for the primary oxygen blow.

(ii) Exit from a control device not used solely for the collection of secondary emissions, as defined in § 60.141a, and exhibit 10 percent opacity or greater, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(c) On and after the date on which the performance test required by § 60.8 is completed, each owner or operator of an affected facility subject to paragraph (b) of this section shall operate the primary gas cleaning system during any reblow in a manner identical to operation during the primary oxygen blow.

[39 FR 9318, Mar. 8, 1974, as amended at 43 FR 15602, Apr. 13, 1978; 51 FR 161, Jan. 2, 1986]

§ 60.143 Monitoring of operations.

(a) The owner or operator of an affected facility shall maintain a single time-measuring instrument which shall be used in recording daily the time and duration of each steel production cycle, and the time and duration of any diversion of exhaust gases from the main stack servicing the BOPF.

(b) The owner or operator of any affected facility that uses venturi scrubber emission control equipment shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(1) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±250 Pa (±1 inch water).

(2) A monitoring device for the continual measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of the design water supply pressure. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The Administrator must be consulted for approval in advance of selecting alternative locations for the pressure sensor or tap.

(3) All monitoring devices shall be synchronized each day with the time-measuring instrument used under paragraph (a) of this section. The chart recorder error directly after synchronization shall not exceed 0.08 cm (1/32 inch).

(4) All monitoring devices shall use chart recorders which are operated at a minimum chart speed of 3.8 cm/hr (1.5 in/hr).

(5) All monitoring devices are to be recalibrated annually, and at other times as the Administrator may require, in accordance with the procedures under § 60.13(b).

(c) Any owner or operator subject to the requirements of paragraph (b) of this section shall report to the Administrator, on a semiannual basis, all measurements over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the mass standards under § 60.142(a)(1), (b)(1)(i) or (b)(2)(i). The accuracy of the respective measurements, not to exceed the values specified in paragraphs (b)(1) and (b)(2) of this section, may be taken into consideration when determining the measurement results that must be reported.

[43 FR 15602, Apr. 13, 1978, as amended at 51 FR 161, Jan. 2, 1986; 54 FR 6667, Feb. 14, 1989]

§ 60.144 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.142 as follows:

(1) The time-measuring instrument of § 60.143 shall be used to document the time and duration of each steel production cycle and each diversion period during each run.

(2) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf). Sampling shall be discontinued during periods of diversions.

(i) For affected facilities that commenced construction, modification, or reconstruction on or before January 20, 1983, the sampling for each run shall continue for an integral number of steel production cycles. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately before tapping.

(ii) For affected facilities that commenced construction, modification, or reconstruction after January 20, 1983, the sampling for each run shall continue for an integral number of primary oxygen blows.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity. Observations taken during a diversion period shall not be used in determining compliance with the opacity standard. Opacity observations taken at 15-second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a 6-minute period.

(c) The owner or operator shall use the monitoring devices of § 60.143(b)(1) and (2) for the duration of the particulate matter runs. The arithmetic average of all measurements taken during these runs shall be used to determine compliance with § 60.143(c).

[54 FR 6667, Feb. 14, 1989, as amended at 65 FR 61756, Oct. 17, 2000]

Subpart Na—Standards of Performance for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983

SOURCE: 51 FR 161, Jan. 2, 1986, unless otherwise noted.

§ 60.140a Applicability and designation of affected facilities.

(a) The provisions of this subpart apply to the following affected facilities in an iron and steel plant: top-blown BOPF's and hot metal transfer stations and skimming stations used

with bottom-blown or top-blown BOPF's.

(b) This subpart applies to any facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after January 20, 1983.

(c) Any BOPF subject to the provisions of this subpart is subject to those provisions of subpart N of this part applicable to affected facilities commencing construction, modification or reconstruction after January 20, 1983.

§60.141a Definitions.

All terms in this subpart not defined below are given the same meaning as in the Clean Air Act as amended or in subpart A of this part.

Basic oxygen process furnace (BOPF) means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and by introducing a high volume of oxygen-rich gas. Open hearth, blast, and reverberatory furnaces are not included in this definition.

Bottom-blown furnace means any BOPF in which oxygen and other combustion gases are introduced to the bath of molten iron through tuyeres in the bottom of the vessel or through tuyeres in the bottom and sides of the vessel.

Fume suppression system means the equipment comprising any system used to inhibit the generation of emissions from steelmaking facilities with an inert gas, flame, or steam blanket applied to the surface of molten iron or steel.

Hot metal transfer station means the facility where molten iron is emptied from the railroad torpedo car or hot metal car to the shop ladle. This includes the transfer of molten iron from the torpedo car or hot metal car to a mixer (or other intermediate vessel) and from a mixer (or other intermediate vessel) to the ladle. This facility is also known as the reladling station or ladle transfer station.

Primary emission control system means the combination of equipment used for the capture and collection of primary emissions (e.g., an open hood capture system used in conjunction with a particulate matter cleaning device such as an electrostatic precipitator or a closed hood capture system used in conjunction with a particulate matter cleaning device such as a scrubber).

Primary emissions means particulate matter emissions from the BOPF generated during the steel production cycle which are captured by, and do not thereafter escape from, the BOPF primary control system.

Primary oxygen blow means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel. This definition does not include any additional, or secondary, oxygen blows made after the primary blow.

Secondary emission control system means the combination of equipment used for the capture and collection of secondary emissions (e.g.,

(1) An open hood system for the capture and collection of primary and secondary emissions from the BOPF, with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of emissions from the hot metal transfer and skimming station; or

(2) An open hood system for the capture and collection of primary and secondary emissions from the furnace, plus a furnace enclosure with local hooding ducted to a secondary emission collection device, such as a baghouse, for additional capture and collection of secondary emissions from the furnace, with local hooding ducted to a secondary emission collection device, such as a baghouse, for the capture and collection of emissions from hot metal transfer and skimming station; or

(3) A furnace enclosure with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of secondary emissions from a BOPF controlled by a closed hood primary emission control system, with local hooding ducted to a secondary emission collection device, such as a baghouse, for the capture and collection of emissions from hot metal transfer and skimming stations).

Secondary emissions means particulate matter emissions that are not captured by the BOPF primary control system, including emissions from hot metal transfer and skimming stations. This definition also includes particulate matter emissions that escape from openings in the primary emission control system, such as from lance hole openings, gaps or tears in the ductwork of the primary emission control system, or leaks in hoods.

Skimming station means the facility where slag is mechanically raked from the top of the bath of molten iron.

Steel production cycle means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel, including the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping, and deslagging. Hot metal transfer and skimming operations for the next steel production cycle are also included when the hot metal transfer station or skimming station is an affected facility.

Top-blown furnace means any BOPF in which oxygen is introduced to the bath of molten iron by means of an oxygen lance inserted from the top of the vessel.

§ 60.142a Standards for particulate matter.

(a) Except as provided under paragraphs (b) and (c) of this section, on and after the date on which the performance test under § 60.8 is required to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any secondary emissions that:

(1) Exit from the BOPF shop roof monitor (or other building openings) and exhibit greater than 10 percent opacity during the steel production cycle of any top-blown BOPF or during hot metal transfer or skimming operations for any bottom-blown BOPF; except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(2) Exit from a control device used solely for the collection of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming for a top-blown or a bottom-blown BOPF and contain particulate matter in excess of 23 mg/dscm (0.010 gr/dscf).

(3) Exit from a control device used solely for the collection of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming for a top-blown or a bottom-blown BOPF and exhibit more than 5 percent opacity.

(b) A fume suppression system used to control secondary emissions from an affected facility is not subject to paragraphs (a)(2) and (a)(3) of this section.

(c) A control device used to collect both primary and secondary emissions from a BOPF is not subject to paragraphs (a)(2) and (a)(3) of this section.

§ 60.143a Monitoring of operations.

(a) Each owner or operator of an affected facility shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each steel production cycle the various rates or levels of exhaust ventilation at each phase of the cycle through each duct of the secondary emission capture system. The monitoring device or devices are to be placed at locations near each capture point of the secondary emission capture system to monitor the exhaust ventilation rates or levels adequately, or in alternative locations approved in advance by the Administrator.

(b) If a chart recorder is used, the owner or operator shall use chart recorders that are operated at a minimum chart speed of 3.8 cm/hr (1.5 in./hr).

(c) All monitoring devices required by paragraph (a) of this section are to be certified by the manufacturer to be accurate to within ±10 percent compared to Method 2 of appendix A of this part. The owner or operator shall recalibrate and check the device(s) annually and at other times as the Administrator may require, in accordance with the written instructions of the manufacturer and by comparing the device against Method 2.

(d) Each owner or operator subject to the requirements of paragraph (a) of

this section shall report on a semiannual basis all measurements of exhaust ventilation rates or levels over any 3-hour period that average more than 10 percent below the average rates or levels of exhaust ventilation maintained during the most recent performance test conducted under §60.8 in which the affected facility demonstrated compliance with the standard under §60.142a(a)(2). The accuracy of the respective measurements, not to exceed the values specified in paragraph (c) of this section, may be considered when determining the measurement results that must be reported.

(e) If a scrubber primary emission control device is used to collect secondary emissions, the owner or operator shall report on a semiannual basis all measurements of exhaust ventilation rate over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under §60.8 in which the affected facility demonstrated compliance with the standard under §60.142(a)(1).

[51 FR 161, Jan. 2, 1986, as amended at 65 FR 61756, Oct. 17, 2000]

§60.144a Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.142a as follows:

(1) Start and end times of each steel production cycle during each run shall be recorded (see §60.145a (c) and (d) for the definitions of start and end times of a cycle).

(2) Method 5 shall be used to determine the particulate matter concentration. Sampling shall be conducted only during the steel production cycle and for a sufficient number of steel production cycles to obtain a total sample volume of at least 5.67 dscm (200 dscf) for each run.

(3) Method 9 and the procedures of §60.11 shall be used to determine opacity, except sections 2.4 and 2.5 of Method 9 shall be replaced with the following instructions for recording observations and reducing data:

(i) *Section 2.4.* Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals. During the initial performance test conducted pursuant to §60.8, observations shall be made and recorded in this manner for a minimum of three steel production cycles. During any subsequent compliance test, observations may be made for any number of steel production cycles, although, where conditions permit, observations will generally be made for a minimum of three steel production cycles.

(ii) *Section 2.5.* Opacity shall be determined as an average of 12 consecutive observations recorded at 15-second intervals. For each steel production cycle, divide the observations recorded into sets of 12 consecutive observations. Sets need not be consecutive in time, and in no case shall two sets overlap. For each set of 12 observations, calculate the average by summing the opacity of 12 consecutive observations and dividing this sum by 12.

(c) In complying with the requirements of §60.143a(c), the owner or operator shall conduct an initial test as follows:

(1) For devices that monitor and record the exhaust ventilation rate, compare velocity readings recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the monitoring device's performance and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the two sets to determine whether the monitoring device velocity is within ±10 percent of the Method 2 average.

(2) For devices that monitor the level of exhaust ventilation and record only step changes when a set point rate is reached, compare step changes recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings

at a point or points that would properly characterize the performance of the monitoring device and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the two sets to determine whether the monitoring device step change is within ±10 percent of the setpoint rate.

(d) To comply with § 60.143a(d) or (e), the owner or operator shall use the monitoring device of § 60.143a(a) to determine the exhaust ventilation rates or levels during the particulate matter runs. Each owner or operator shall then use these rates or levels to determine the 3-hour averages required by § 60.143a(d) and (e).

[51 FR 161, Jan. 2, 1986, as amended at 54 FR 6667, Feb. 14, 1989; 65 FR 61756, Oct. 17, 2000]

§ 60.145a Compliance provisions.

(a) When determining compliance with mass and visible emission limits specified in § 60.142a(a) (2) and (3), the owner or operator of a BOPF shop that normally operates two furnaces with overlapping cycles may elect to operate only one furnace. If an owner or operator chooses to shut down one furnace, he shall be allowed a reasonable time period to adjust his production schedule before the compliance tests are conducted. The owner or operator of an affected facility may also elect to suspend shop operations not subject to this subpart during compliance testing.

(b) During compliance testing for mass and visible emission standards, if an owner or operator elects to shut down one furnace in a shop that normally operates two furnaces with overlapping cycles, the owner or operator shall operate the secondary emission control system for the furnace being tested at exhaust ventilation rates or levels for each duct of the secondary emission control system that are appropriate for single-furnace operation. Following the compliance test, the owner or operator shall operate the secondary emission control system at exhaust ventilation rates or levels for each duct of the system that are no lower than 90 percent of the exhaust ventilation values established during the most recent compliance test.

(c) For the purpose of determining compliance with visible and mass emission standards, a steel production cycle begins when the scrap or hot metal is charged to the vessel (whichever operation occurs first) and terminates 3 minutes after slag is emptied from the vessel into the slag pot. Consecutive steel production cycles are not required for the purpose of determining compliance. Where a hot metal transfer or skimming station is an affected facility, the steel production cycle also includes the hot metal transfer or skimming operation for the next steel production cycle for the affected vessel. Visible emission observations for both hot metal transfer and skimming operations begin with the start of the operation and terminate 3 minutes after completion of the operation.

(d) For the purpose of determining compliance with visible emission standards specified in § 60.142a(a) (1) and (3), the starting and stopping times of regulated process operations shall be determined and the starting and stopping times of visible emissions data sets shall be determined accordingly.

(e) To determine compliance with § 60.142a(a)(1), select the data sets yielding the highest and second highest 3-minute average opacities for each steel production cycle. Compliance is achieved if the highest 3-minute average for each cycle observed is less than 20 percent and the second highest 3-minute average is 10 percent or less.

(f) To determine compliance with § 60.142(a)(2), determine the concentration of particulate matter in exhaust gases exiting the secondary emission collection device with Method 5. Compliance is achieved if the concentration of particulate matter does not exceed 23 mg/dscm (0.010 gr/dscf).

(g) To determine compliance with § 60.142a(a)(3), construct consecutive 3-minute averages for each steel production cycle. Compliance is achieved if no 3-minute average is more than 5 percent.

[51 FR 161, Jan. 2, 1986, as amended at 65 FR 61756, Oct. 17, 2000]

Subpart O—Standards of Performance for Sewage Treatment Plants

§ 60.150 Applicability and designation of affected facility.

(a) The affected facility is each incinerator that combusts wastes containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or each incinerator that charges more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis).

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 58521, Nov. 10, 1977]

§ 60.151 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

[39 FR 9319, Mar. 8, 1974]

§ 60.152 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of any sewage sludge incinerator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere of:

(1) Particulate matter at a rate in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).

(2) Any gases which exhibit 20 percent opacity or greater.

[39 FR 9319, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.153 Monitoring of operations.

(a) The owner or operator of any sludge incinerator subject to the provisions of this subpart shall:

(1) Install, calibrate, maintain, and operate a flow measuring device which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range. Except as provided in paragraph (d) of this section, the flow measuring device shall be operated continuously and data recorded during all periods of operation of the incinerator.

(2) Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

(3) Install, calibrate, maintain, and operate a weighing device for determining the mass of any municipal solid waste charged to the incinerator when sewage sludge and municipal solid waste are incinerated together. The weighing device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall comply with the requirements of paragraph (a) of this section and:

(1) For incinerators equipped with a wet scrubbing device, install, calibrate, maintain and operate a monitoring device that continuously measures and records the pressure drop of the gas flow through the wet scrubbing device. Where a combination of wet scrubbers is used in series, the pressure drop of the gas flow through the combined system shall be continuously monitored. The device used to monitor scrubber pressure drop shall be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water gauge) and shall be calibrated on an annual basis in accordance with the manufacturer's instructions.

(2) Install, calibrate, maintain and operate a monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas. The oxygen monitor shall be located upstream of any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air recirculation damper, or any other source of dilution air. The oxygen monitoring device shall be certified by the manufacturer to have a relative accurancy of ±5 percent over its operating range and shall be calibrated according to method(s) prescribed by the manufacturer at least once each 24-hour operating period.

(3) Install, calibrate, maintain and operate temperature measuring devices

at every hearth in multiple hearth furnaces; in the bed and outlet of fluidized bed incinerators; and in the drying, combustion, and cooling zones of electric incinerators. For multiple hearth furnaces, a minimum of one temperature measuring device shall be installed in each hearth in the cooling and drying zones, and a minimum of two temperature measuring devices shall be installed in each hearth in the combustion zone. For electric incinerators, a minimum of one temperature measuring device shall be installed in the drying zone and one in the cooling zone, and a minimum of two temperature measuring devices shall be installed in the combustion zone. Each temperature measuring device shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range. Except as provided in paragraph (d) of this section, the temperature monitoring devices shall be operated continuously and data recorded during all periods of operation of the incinerator.

(4) Install, calibrate, maintain and operate a device for measuring the fuel flow to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range. Except as provided in paragraph (d) of the section, the fuel flow measuring device shall be operated continuously and data recorded during all periods of operation of the incinerator.

(5) Except as provided in paragraph (d) of this section, collect and analyze a grab sample of the sludge fed to the incinerator once per day. The dry sludge content and the volatile solids content of the sample shall be determined in accordance with the method specified under § 60.154(b)(5), except that the determination of volatile solids, step (3)(b) of the method, may not be deleted.

(c) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall retain the following information and make it available for inspection by the Administrator for a minimum of 2 years:

(1) For incinerators equipped with a wet scrubbing device, a record of the measured pressure drop of the gas flow through the wet scrubbing device, as required by paragraph (b)(1) of this section.

(2) A record of the measured oxygen content of the incinerator exhaust gas, as required by paragraph (b)(2) of this section.

(3) A record of the rate of sludge charged to the incinerator, the measured temperatures of the incinerator, the fuel flow to the incinerator, and the total solids and volatile solids content of the sludge charged to the incinerator, as required by paragraphs (a)(1), (b)(3), (b)(4), and (b)(5) of this section.

(d) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart from which the particulate matter emission rate measured during the performance test required under § 60.154(d) is less than or equal to 0.38 g/kg of dry sludge input (0.75 lb/ton) shall be required to comply with the requirements in paragraphs (a), (b), and (c) of this section during all periods of this incinerator following the performance test except that:

(1) Continuous operation of the monitoring devices and data recorders in paragraphs (a)(1), (b)(3), and (b)(4) of this section shall not be required.

(2) Daily sampling and analysis of sludge feed in paragraph (b)(5) of this section shall not be required.

(3) Recordkeeping specified in paragraph (c)(3) of this section shall not be required.

(e) The owner or operator of any sludge incinerator other than a multiple hearth, fluidized bed, or electric incinerator or any sludge incinerator equipped with a control device other than a wet scrubber shall submit to the Administrator for approval a plan for monitoring and recording incinerator and control device operation parameters. The plan shall be submitted to the Administrator:

(1) No later than 90 days after October 6, 1988, for sources which have provided notification of commencement of construction prior to October 6, 1988.

(2) No later than 90 days after the notification of commencement of construction, for sources which provide notification of commencement of construction on or after October 6, 1988.

(3) At least 90 days prior to the date on which the new control device becomes operative, for sources switching to a control device other than a wet scrubber.

[36 FR 24877, Dec. 23, 1971, as amended at 53 FR 39416, Oct. 6, 1988; 65 FR 61756, Oct. 17, 2000]

§ 60.154 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter emission standards in § 60.152 as follows:

(1) The emission rate (E) of particulate matter for each run shall be computed using the following equation:

$$E = \frac{c_s Q_{sd}}{KS}$$

Where:

E = Emission rate of particulate matter, g/kg (lb/ton) of dry sludge input.

c_s = Concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd} = Volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

S = Charging rate of dry sludge during the run, kg/hr (ton/hr).

K = Conversion factor, 1.0 g/g (7,000 gr/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The dry sludge charging rate (S) for each run shall be computed using either of the following equations:

$$S = S_m R_{dm} / \Theta$$

$$S = S_v R_{dv} / K_v \Theta$$

Where:

S = Charging rate of dry sludge, kg/hr (ton/hr).

S_m = Total mass of sludge charge, kg (ton).

R_{dm} = Average mass of dry sludge per unit mass of sludge charged, kg/kg (ton/ton).

θ = Duration of run, hr.

S_v = Total volume of sludge charged, m^3 (gal).

R_{dv} = Average mass of dry sludge per unit volume of sludge charged, kg/m^3 (lb/gal).

K_v = Conversion factor, 1 g/g (2,000 lb/ton).

(4) the flow measuring device of § 60.153(a)(1) shall be used to determine the total mass (S_m) or volume (S_v) of sludge charged to the incinerator during each run. If the flow measuring device is on a time rate basis, readings shall be taken and recorded at 5-minute intervals during the run and the total charge of sludge shall be computed using the following equations, as applicable:

$$S_m = \sum_{i=1}^{n} Q/_{mi} \theta_i$$

$$S_v = \sum_{i=1}^{n} \frac{Q_{vi}}{\theta_i}$$

Where:

S_m = Total mass of sludge charged to the incinerator during the test run.

S_v = Total volume of sludge charged to the incinerator during the test run.

Q_{mi} = Average mass flow rate calculated by averaging the flow rates at the beginning and end of each interval ''i,'' kg/hr (ton/hr).

Q_{vi} = Average volume flow rate calculated by averaging the flow rates at the beginning and end of each interval ''i,'' m^3/hr (gal/hr).

θ_i = Duration of interval ''i,'' hr.

(5) Samples of the sludge charged to the incinerator shall be collected in nonporous jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends, and ''209 F. Method for Solid and Semisolid Samples'' (incorporated by reference—see § 60.17) shall be used to determine dry sludge content of each sample (total solids residue), except that:

(i) Evaporating dishes shall be ignited to at least 103 °C rather than the 550 °C specified in step 3(a)(1).

(ii) Determination of volatile residue, step 3(b) may be deleted.

(iii) The quantity of dry sludge per unit sludge charged shall be determined in terms of kg/m^3 (lb/gal) or kg/kg (ton/ton).

(iv) The average dry sludge content shall be the arithmetic average of all the samples taken during the run.

(6) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) [Reserved]

(d) The owner or operator of any sludge incinerator subject to the provisions of this subpart shall conduct a performance test during which the monitoring and recording devices required under § 60.153(a)(1), (b)(1), (b)(2), (b)(3), and (b)(4) are installed and operating and for which the sampling and analysis procedures required under § 60.153(b)(5) are performed. The owner or operator shall provide the Administrator at least 30 days prior notice of the performance test to afford the Administrator the opportunity to have an observer present.

(1) For incinerators that commenced construction or modification on or before April 18, 1986, the performance test shall be conducted within 360 days of the effective date of these regulations unless the monitoring and recording devices required under § 60.153(a)(1), (b)(1), (b)(2), (b)(3), and (b)(4) were installed and operating and the sampling and analysis procedures required under § 60.153(b)(5) were performed during the most recent performance test and a record of the measurements taken during the performance test is available.

(2) For incinerators that commence construction or modification after April 18, 1986, the date of the performance test shall be determined by the requirements in § 60.8.

[54 FR 6668, Feb. 14, 1989, as amended at 54 FR 27015, June 27, 1989; 59 FR 5108, Feb. 3, 1994; 65 FR 61756, Oct. 17, 2000]

§ 60.155 Reporting.

(a) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall submit to the Administrator semi-annually a report in writing which contains the following:

(1) A record of average scrubber pressure drop measurements for each period of 15 minutes duration or more during which the pressure drop of the scrubber was less than, by a percentage specified below, the average scrubber pressure drop measured during the most recent performance test. The percent reduction in scrubber pressure drop for which a report is required shall be determined as follows:

(i) For incinerators that achieved an average particulate matter emission rate of 0.38 kg/Mg (0.75 lb/ton) dry sludge input or less during the most recent performance test, a scrubber pressure drop reduction of more than 30 percent from the average scrubber pressure drop recorded during the most recent performance test shall be reported.

(ii) For incinerators that achieved an average particulate matter emission rate of greater than 0.38 kg/Mg (0.75 lb/ton) dry sludge input during the most recent performance test, a percent reduction in pressure drop greater than that calculated according to the following equation shall be reported:

$$P = -111E + 72.15$$

where P=Percent reduction in pressure drop, and

E=Average particulate matter emissions (kg/megagram)

(2) A record of average oxygen content in the incinerator exhaust gas for each period of 1-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than 3 percent.

(b) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator from which the average particulate matter emission rate measured during the performance test required under § 60.154(d) exceeds 0.38 g/kg of dry sludge input (0.75 lb/ton of dry sludge input) shall include in the report for each calendar day that a decrease in scrubber pressure drop or increase in oxygen content of exhaust gas is reported a record of the following:

(1) Scrubber pressure drop averaged over each 1-hour incinerator operating period.

(2) Oxygen content in the incinerator exhaust averaged over each 1-hour incinerator operating period.

(3) Temperatures of every hearth in multiple hearth incinerators; of the bed and outlet of fluidized bed incinerators; and of the drying, combustion,

and cooling zones of electric incinerators averaged over each 1-hour incinerator operating period.

(4) Rate of sludge charged to the incinerator averaged over each 1-hour incinerator operating period.

(5) Incinerator fuel use averaged over each 8-hour incinerator operating period.

(6) Moisture and volatile solids content of the daily grab sample of sludge charged to the incinerator.

(c) The owner or operator of any sludge incinerator other than a multiple hearth, fluidized bed, or electric incinerator or any sludge incinerator equipped with a control device other than a wet scrubber shall include in the semi-annual report a record of control device operation measurements, as specified in the plan approved under § 60.153(e).

[53 FR 39417, Oct. 6, 1988]

§ 60.156 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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: § 60.153(e).

[53 FR 39418, Oct. 6, 1988]

Subpart P—Standards of Performance for Primary Copper Smelters

SOURCE: 41 FR 2338, Jan. 15, 1976, unless otherwise noted.

§ 60.160 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in primary copper smelters: Dryer, roaster, smelting furnace, and copper converter.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 16, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.161 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Primary copper smelter* means any installation or any intermediate process engaged in the production of copper from copper sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) *Dryer* means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a portion of the moisture from the charge, provided less than 5 percent of the sulfur contained in the charge is eliminated in the facility.

(c) *Roaster* means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (5 percent or more) of the sulfur contained in the charge.

(d) *Calcine* means the solid materials produced by a roaster.

(e) *Smelting* means processing techniques for the melting of a copper sulfide ore concentrate or calcine charge leading to the formation of separate layers of molten slag, molten copper, and/or copper matte.

(f) *Smelting furnace* means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided by an electric current, rapid oxidation of a portion of the sulfur contained in the concentrate as it passes through an oxidizing atmosphere, or the combustion of a fossil fuel.

(g) *Copper converter* means any vessel to which copper matte is charged and oxidized to copper.

(h) *Sulfuric acid plant* means any facility producing sulfuric acid by the contact process.

(i) *Fossil fuel* means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(j) *Reverberatory smelting furnace* means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided

primarily by combustion of a fossil fuel.

(k) *Total smelter charge* means the weight (dry basis) of all copper sulfide ore concentrates processed at a primary copper smelter, plus the weight of all other solid materials introduced into the roasters and smelting furnaces at a primary copper smelter, except calcine, over a one-month period.

(l) *High level of volatile impurities* means a total smelter charge containing more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc, on a dry basis.

§ 60.162 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dryer any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

§ 60.163 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any roaster, smelting furnace, or copper converter any gases which contain sulfur dioxide in excess of 0.065 percent by volume, except as provided in paragraphs (b) and (c) of this section.

(b) Reverberatory smelting furnaces shall be exempted from paragraph (a) of this section during periods when the total smelter charge at the primary copper smelter contains a high level of volatile impurities.

(c) A change in the fuel combusted in a reverberatory smelting furnace shall not be considered a modification under this part.

§ 60.164 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dryer any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.163, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.165 Monitoring of operations.

(a) The owner or operator of any primary copper smelter subject to § 60.163 (b) shall keep a monthly record of the total smelter charge and the weight percent (dry basis) of arsenic, antimony, lead and zinc contained in this charge. The analytical methods and procedures employed to determine the weight of the total smelter charge and the weight percent of arsenic, antimony, lead and zinc shall be approved by the Administrator and shall be accurate to within plus or minus ten percent.

(b) The owner or operator of any primary copper smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any dryer. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster, smelting furnace or copper converter subject to § 60.163 (a). The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c) the reference method referred to under the Relative Accuracy Test Procedure in Performance Specification 2 of appendix B to this part shall be Method 6.

For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gas used to prepare the calibration gas mixtures required under Performance Specification 2 of appendix B, and for calibration checks under § 60.13 (d), shall be sulfur dioxide.

(c) Six-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the four consecutive 6-hour periods of each operating day. Each six-hour average shall be determined as the arithmetic mean of the appropriate six contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (b) of this section.

(d) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) *Opacity*. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (b) of this section, exceeds the standard under § 60.164(a).

(2) *Sulfur dioxide*. All six-hour periods during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (b) of this section, exceed the level of the standard. The Administrator will not consider emissions in excess of the level of the standard for less than or equal to 1.5 percent of the six-hour periods during the quarter as indicative of a potential violation of § 60.11(d) provided the affected facility, including air pollution control equipment, is maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions during these periods. Emissions in excess of the level of the standard during periods of startup, shutdown, and malfunction are not to be included within the 1.5 percent.

[41 FR 2338, Jan. 15, 1976; 41 FR 8346, Feb. 26, 1976, as amended at 42 FR 57126, Nov. 1, 1977; 48 FR 23611, May 25, 1983; 54 FR 6668, Feb. 14, 1989; 65 FR 61756, Oct. 17, 2000]

§ 60.166 Test methods and procedures.

(a) In conducting performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2) and visible emission standards in §§ 60.162, 60.163, and 60.164 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.165(b)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 6 hours, and the average SO_2 concentration shall be computed for the 6-hour period as in § 60.165(c). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6668, Feb. 14, 1989]

Subpart Q—Standards of Performance for Primary Zinc Smelters

SOURCE: 41 FR 2340, Jan. 15, 1976, unless otherwise noted.

§ 60.170 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in primary zinc smelters: roaster and sintering machine.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 16, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.171 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Primary zinc smelter* means any installation engaged in the production, or any intermediate process in the production, of zinc or zinc oxide from zinc

sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) *Roaster* means any facility in which a zinc sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (more than 10 percent) of the sulfur contained in the charge.

(c) *Sintering machine* means any furnace in which calcines are heated in the presence of air to agglomerate the calcines into a hard porous mass called *sinter*.

(d) *Sulfuric acid plant* means any facility producing sulfuric acid by the contact process.

§ 60.172 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

§ 60.173 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any roaster any gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(b) Any sintering machine which eliminates more than 10 percent of the sulfur initially contained in the zinc sulfide ore concentrates will be considered as a roaster under paragraph (a) of this section.

§ 60.174 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.173, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.175 Monitoring of operations.

(a) The owner or operator of any primary zinc smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any sintering machine. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster subject to § 60.173. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c), the reference method referred to under the Relative Accuracy Test Procedure in Performance Specification 2 of appendix B to this part shall be Method 6. For the performance evaluation, each concentration measurement shall be of 1 hour duration. The pollutant gas used to prepare the calibration gas mixtures required under Performance Specification 2 of appendix B, and for calibration checks under § 60.13(d), shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the 12 consecutive 2-hour periods of each operating day. Each 2-hour average shall be determined as the arithmetic mean of the appropriate two contiguous 1-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (a) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any 6-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.174(a).

(2) Sulfur dioxide. Any 2-hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.173.

[41 FR 2340, Jan. 15, 1976, as amended at 48 FR 23611, May 25, 1983; 54 FR 6668, Feb. 14, 1989]

§ 60.176 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2), and visible emission standards in §§ 60.172, 60.173, and 60.174 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.175(a)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 2 hours, and the average SO_2 concentration for the 2-hour period shall be computed as in § 60.175(b). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6669, Feb. 14, 1989]

Subpart R—Standards of Performance for Primary Lead Smelters

SOURCE: 41 FR 2340, Jan. 15, 1976, unless otherwise noted.

§ 60.180 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in primary lead smelters: sintering machine, sintering machine discharge end, blast furnace, dross reverberatory furnace, electric smelting furnace, and converter.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 16, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.181 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Primary lead smelter* means any installation or any intermediate process engaged in the production of lead from lead sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) *Sintering machine* means any furnace in which a lead sulfide ore concentrate charge is heated in the presence of air to eliminate sulfur contained in the charge and to agglomerate the charge into a hard porous mass called *sinter*.

(c) *Sinter bed* means the lead sulfide ore concentrate charge within a sintering machine.

(d) *Sintering machine discharge end* means any apparatus which receives sinter as it is discharged from the conveying grate of a sintering machine.

(e) *Blast furnace* means any reduction furnace to which sinter is charged and which forms separate layers of molten slag and lead bullion.

(f) *Dross reverberatory furnace* means any furnace used for the removal or refining of impurities from lead bullion.

(g) *Electric smelting furnace* means any furnace in which the heat necessary for

smelting of the lead sulfide ore concentrate charge is generated by passing an electric current through a portion of the molten mass in the furnace.

(h) *Converter* means any vessel to which lead concentrate or bullion is charged and refined.

(i) *Sulfuric acid plant* means any facility producing sulfuric acid by the contact process.

§ 60.182 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(b) [Reserved]

§ 60.183 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine, electric smelting furnace, or converter gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(b) [Reserved]

§ 60.184 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.183, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.185 Monitoring of operations.

(a) The owner or operator of any primary lead smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any sintering machine, electric furnace or converter subject to § 60.183. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c), the reference method referred to under the Relative Accuracy Test Procedure in Performance Specification 2 of appendix B to this part shall be Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gases used to prepare the calibration gas mixtures required under Performance Specification 2 of appendix B, and for calibration checks under § 60.13(d), shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the twelve consecutive two-hour periods of each operating day. Each two-hour average shall be determined as the arithmetic mean of the appropriate two contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (a) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.184(a).

(2) Sulfur dioxide. Any two-hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.183.

[41 FR 2340, Jan. 15, 1976, as amended at 48 FR 23611, May 25, 1983; 54 FR 6668, Feb. 14, 1989]

§ 60.186 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2), and visible emission standards in §§ 60.182, 60.183, and 60.184 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.185(a)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 2 hours, and the average SO_2 concentration for the 2-hour period shall be computed as in § 60.185(b). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6669, Feb. 14, 1989]

Subpart S—Standards of Performance for Primary Aluminum Reduction Plants

SOURCE: 45 FR 44207, June 30, 1980, unless otherwise noted.

§ 60.190 Applicability and designation of affected facility.

(a) The affected facilities in primary aluminum reduction plants to which this subpart applies are potroom groups and anode bake plants.

(b) Except as provided in paragraph (c) of this section, any affected facility under paragraph (a) of this section that commences construction or modification after October 23, 1974, is subject to the requirements of this subpart.

(c) An owner or operator of an affected facility under paragraph (a) of this section may elect to comply with the requirements of this subpart or the requirements of subpart LL of part 63 of this chapter.

[42 FR 37937, July 25, 1977, as amended at 45 FR 44206, June 30, 1980; 62 FR 52399, Oct. 7, 1997]

§ 60.191 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Aluminum equivalent means an amount of aluminum which can be produced from a Mg of anodes produced by an anode bake plant as determined by § 60.195(g).

Anode bake plant means a facility which produces carbon anodes for use in a primary aluminum reduction plant.

Potroom means a building unit which houses a group of electrolytic cells in which aluminum is produced.

Potroom group means an uncontrolled potroom, a potroom which is controlled individually, or a group of potrooms or potroom segments ducted to a common control system.

Primary aluminum reduction plant means any facility manufacturing aluminum by electrolytic reduction.

Primary control system means an air pollution control system designed to remove gaseous and particulate flourides from exhaust gases which are captured at the cell.

Roof monitor means that portion of the roof of a potroom where gases not captured at the cell exit from the potroom.

Total fluorides means elemental fluorine and all fluoride compounds as

measured by reference methods specified in § 60.195 or by equivalent or alternative methods (see § 60.8(b)).

§ 60.192 Standard for fluorides.

(a) On and after the date on which the initial performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases containing total fluorides, as measured according to § 60.195, in excess of:

(1) 1.0 kg/Mg (2.0 lb/ton) of aluminum produced for potroom groups at Soderberg plants: except that emissions between 1.0 kg/Mg and 1.3 kg/Mg (2.6 lb/ton) will be considered in compliance if the owner or operator demonstrates that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the affected facility during the performance tests;

(2) 0.95 kg/Mg (1.9 lb/ton) of aluminum produced for potroom groups at prebake plants; except that emissions between 0.95 kg/Mg and 1.25 kg/Mg (2.5 lb/ton) will be considered in compliance if the owner or operator demonstrates that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the affected facility during the performance test; and

(3) 0.05 kg/Mg (0.1 lb/ton) of aluminum equivalent for anode bake plants.

(b) Within 30 days of any performance test which reveals emissions which fall between the 1.0 kg/Mg and 1.3 kg/Mg levels in paragraph (a)(1) of this section or between the 0.95 kg/Mg and 1.25 kg/Mg levels in paragraph (a)(2) of this section, the owner or operator shall submit a report indicating whether all necessary control devices were on-line and operating properly during the performance test, describing the operating and maintenance procedures followed, and setting forth any explanation for the excess emissions, to the Director of the Enforcement Division of the appropriate EPA Regional Office.

[45 FR 44207, June 30, 1980, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.193 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any potroom group any gases which exhibit 10 percent opacity or greater, or

(2) From any anode bake plant any gases which exhibit 20 percent opacity or greater.

§ 60.194 Monitoring of operations.

(a) The owner or operator of any affected facility subject to the provisions of this subpart shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the weight of aluminum and anode produced. The weighing devices shall have an accuracy of ±5 percent over their operating range.

(b) The owner or operator of any affected facility shall maintain a record of daily production rates of aluminum and anodes, raw material feed rates, and cell or potline voltages.

(c) Following the initial performance test as required under § 60.8(a), an owner or operator shall conduct a performance test at least once each month during the life of the affected facility, except when malfunctions prevent representative sampling, as provided under § 60.8(c). The owner or operator shall give the Administrator at least 15 days advance notice of each test. The Administrator may require additional testing under section 114 of the Clean Air Act.

(d) An owner or operator may petition the Administrator to establish an alternative testing requirement that requires testing less frequently than once each month for a primary control system or an anode bake plant. If the owner or operator show that emissions from the primary control system or the anode bake plant have low variability during day-to-day operations, the Administrator may establish such an alternative testing requirement. The alternative testing requirement shall include a testing schedule and, in the case of a primary control system, the method to be used to determine primary control system emissions for the

purpose of performance tests. The Administrator shall publish the alternative testing requirement in the FEDERAL REGISTER.

(1) Alternative testing requirements are established for Anaconda Aluminum Company's Sebree plant in Henderson, Kentucky: The anode bake plant and primary control system are to be tested once a year rather than once a month.

(2) Alternative testing requirements are established for Alumax of South Carolina's Mt. Holly Plant in Mt. Holly, South Carolina: The anode bake plant and primary control system are to be tested once a year rather than once a month.

[45 FR 44207, June 30, 1980, as amended at 54 FR 6669, Feb. 14, 1989]

§ 60.195 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides and visible emission standards in §§ 60.192 and 60.193 as follows:

(1) The emission rate (E_p) of total fluorides from potroom groups shall be computed for each run using the following equation:

$$E_p=[(C_s\ Q_{sd})_1+(C_s\ Q_{sd})_2]/(P\ K)$$

where:

E_p=emission rate of total fluorides from a potroom group, kg/Mg (lb/ton).
C_s=concentration of total fluorides, mg/dscm (gr/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=aluminum production rate, Mg/hr (ton/hr).
K=conversion factor, 10^6 mg/kg (7,000 gr/lb).
1=subscript for primary control system effluent gas.
2=subscript for secondary control system or roof monitor effluent gas.

(2) The emission rate (E_b) of total fluorides from anode bake plants shall be computed for each run using the following equation:

$$E_b=(C_s\ Q_{sd})/(P_e K)$$

where:

E_b=emission rate of total fluorides, kg/Mg (lb/ton) of aluminum equivalent.
C_s=concentration of total fluorides, mg/dscm (gr/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P_e=aluminum equivalent for anode production rate, Mg/hr (ton/hr).
K=conversion factor, 10^6 mg/kg (7,000 gr/lb).

(3) Methods 13A or 13B shall be used for ducts or stacks, and Method 14 for roof monitors not employing stacks or pollutant collection systems, to determine the total fluorides concentration (C_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 8 hours and 6.80 dscm (240 dscf) for potroom groups and at least 4 hours and 3.40 dscm (120 dscf) for anode bake plants.

(4) The monitoring devices of § 60.194(a) shall be used to determine the daily weight of aluminum and anode produced.

(i) The aluminum production rate (P) shall be determined by dividing 720 hours into the weight of aluminum tapped from the affected facility during a period of 30 days before and including the final run of a performance test.

(ii) The aluminum equivalent production rate (P_e) for anodes shall be determined as 2 times the average weight of anode produced during a representative oven cycle divided by the cycle time. An owner or operator may establish a multiplication factor other than 2 by submitting production records of the amount of aluminum produced and the concurrent weight of anodes consumed by the potrooms.

(5) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6669, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart T—Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants

§ 60.200 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each

wet-process phosphoric acid plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: reactors, filters, evaporators, and hot wells.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§ 60.201 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Wet-process phosphoric acid plant* means any facility manufacturing phosphoric acid by reacting phosphate rock and acid.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.204, or equivalent or alternative methods.

(c) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33154, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.202 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 10.0 g/Mg of equivalent P_2O_5 feed (0.020 lb/ton).

[40 FR 33154, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.203 Monitoring of operations.

(a) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any wet-process phosphoric acid plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus bearing feed using a monitoring device for measuring mass flowrate which meets the requirements of paragraph (a) of this section and then by proceeding according to § 60.204(b)(3).

(c) The owner or operator of any wet-process phosphoric acid subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 3154, Aug. 6, 1975, as amended at 54 FR 6669, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.204 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.202 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} \, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).

N=number of emission points associated with the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each

of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P=M_p R_p$$

where:

M_p=total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.203(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6669, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart U—Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants

§ 60.210 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each superphosphoric acid plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: evaporators, hot wells, acid sumps, and cooling tanks.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§ 60.211 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Superphosphoric acid plant* means any facility which concentrates wet-process phosphoric acid to 66 percent or greater P_2O_5 content by weight for eventual consumption as a fertilizer.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.214, or equivalent or alternative methods.

(c) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33155, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.212 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 5.0 g/megagram (Mg) of equivalent P_2O_5 feed (0.010 lb/ton).

[40 FR 33155, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.213 Monitoring of operations.

(a) The owner or operator of any superphosphoric acid plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any superphosphoric acid plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to § 60.214(b)(3).

(c) The owner or operator of any superphosphoric acid plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process

scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 33155, Aug. 6, 1975, as amended at 54 FR 6670, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.214 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.212 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} \, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).

N=number of emission points associated with the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p \, R_p$$

where:

M_p=total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.213(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6670, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart V—Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants

§ 60.220 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each granular diammonium phosphate plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: reactors, granulators, dryers, coolers, screens, and mills.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§ 60.221 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Granular diammonium phosphate plant* means any plant manufacturing granular diammonium phosphate by reacting phosphoric acid with ammonia.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.224, or equivalent or alternative methods.

(c) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33155, Aug. 6, 1975]

§ 60.222 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from

any affected facility any gases which contain total fluorides in excess of 30 g/megagram (Mg) of equivalent P_2O_5 feed (0.060 lb/ton).

[40 FR 33155, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.223 Monitoring of operations.

(a) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any granular diammonium phosphate plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to § 60.224(b)(3).

(c) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 33155, Aug. 6, 1975, as amended at 54 FR 6670, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.224 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.222 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).

N=number of emission points associated with the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p R_p$$

where:

M_p=total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.223(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6670, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart W—Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants

§ 60.230 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each triple superphosphate plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day.

For the purpose of this subpart, the affected facility includes any combination of: mixers, curing belts (dens), reactors, granulators, dryers, cookers, screens, mills, and facilities which store run-of-pile triple superphosphate.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§ 60.231 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Triple superphosphate plant* means any facility manufacturing triple superphosphate by reacting phosphate rock with phosphoric acid. A run-of-pile triple superphosphate plant includes curing and storing.

(b) *Run-of-pile triple superphosphate* means any triple superphosphate that has not been processed in a granulator and is composed of particles at least 25 percent by weight of which (when not caked) will pass through a 16 mesh screen.

(c) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.234, or equivalent or alternative methods.

(d) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33156, Aug. 6, 1975]

§ 60.232 Standard for fluorides.

On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 100 g/megagram (Mg) of equivalent P_2O_5 feed (0.20 lb/ton).

[40 FR 33156, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.233 Monitoring of operations.

The owner or operator of any triple superphosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

The owner or operator of any triple superphosphate plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to § 60.234(b)(3).

The owner or operator of any triple superphosphate plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 33156, Aug. 6, 1975, as amended at 54 FR 6670, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.234 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standards in § 60.232 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} \, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).
N=number of emission points in the affected facility.
P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).
K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13b shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p R_p$$

where:

M_p total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).
R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.233(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6670, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart X—Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities

§ 60.240 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each granular triple superphosphate storage facility. For the purpose of this subpart, the affected facility includes any combination of: Storage or curing piles, conveyors, elevators, screens and mills.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977]

§ 60.241 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Granular triple superphosphate storage facility* means any facility curing or storing fresh granular triple superphosphate.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.244, or equivalent or alternative methods.

(c) *Equivalent P_2O_5 stored* means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

(d) *Fresh granular triple superphosphate* means granular triple superphosphate produced within the preceding 72 hours.

[40 FR 33156, Aug. 6, 1975, as amended at 62 FR 18280, Apr. 15, 1997; 65 FR 61757, Oct. 17, 2000]

§ 60.242 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 0.25 g/hr/megagram (Mg) of equivalent P_2O_5 stored (5.0×10^{-4} lb/hr/ton of equivalent P_2O_5 stored).

(b) No owner or operator subject to the provisions of this subpart shall ship fresh granular triple superphosphate from an affected facility.

[40 FR 33156, Aug. 6, 1975, as amended at 62 FR 18280, Apr. 15, 1997; 65 FR 61757, Oct. 17, 2000]

§ 60.243 Monitoring of operations.

(a) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall maintain an accurate account of triple superphosphate in storage to permit the determination of the amount of equivalent P_2O_5 stored.

(b) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of

this subpart shall maintain a daily record of total equivalent P_2O_5 stored by multiplying the percentage P_2O_5 content, as determined by § 60.244(c)(3), times the total mass of granular triple superphosphate stored.

(c) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across any process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(d) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall develop for approval by the Administrator a site-specific methodology including sufficient recordkeeping for the purposes of demonstrating compliance with § 60.242 (b).

[40 FR 33156, Aug. 6, 1975, as amended at 54 FR 6671, Feb. 14, 1989; 62 FR 18280, Apr. 15, 1997]

§ 60.244 Test methods and procedures.

(a) The owner or operator shall conduct performance tests required in § 60.8 only when the following quantities of product are being cured or stored in the facility.

(1) Total granular triple superphosphate is at least 10 percent of the building capacity, and

(2) Fresh granular triple superphosphate is at least 6 percent of the total amount of triple superphosphate, or

(3) If the provision in paragraph (a)(2) of this section exceeds production capabilities for fresh granular triple superphosphate, fresh granular triple superphosphate is equal to at least 5 days maximum production.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the total fluorides standard in § 60.242 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} \, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/hr/Mg (lb/hr/ton) of equivalent P_2O_5 stored.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).

N=number of emission points in the affected facility.

P=equivalent P_2O_5 stored, metric tons (tons).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p \, R_p$$

where:

M_p=amount of product in storage, Mg (ton).

R_p=P_2O_5 content of product in storage, weight fraction.

(i) The accountability system of § 60.243(a) shall be used to determine the amount of product (M_p) in storage.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the product in storage.

[54 FR 6671, Feb. 14, 1989, as amended at 62 FR 18280, Apr. 15, 1997; 65 FR 61757, Oct. 17, 2000]

EDITORIAL NOTE: At 65 FR 61757, Oct. 17, 2000, § 60.244 (c)(1) was amended. However, the instruction, which read in part, ''revising the words ''metric ton'' the words ''(453,600 mg/lb)'' in the definition of the term ''K'' to read ''(7,000 gr/lb).'' . . . '' could not be incorporated because of inaccurate amendatory language.

Subpart Y—Standards of Performance for Coal Preparation and Processing Plants

SOURCE: 74 FR 51977, Oct. 8, 2009, unless otherwise noted.

§ 60.250 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to affected facilities in coal preparation and processing plants that process more than 181 megagrams (Mg) (200 tons) of coal per day.

(b) The provisions in § 60.251, § 60.252(a), § 60.253(a), § 60.254(a), § 60.255(a), and § 60.256(a) of this subpart are applicable to any of the following affected facilities that commenced construction, reconstruction or modification after October 27, 1974, and on or before April 28, 2008: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems, transfer and loading systems.

(c) The provisions in § 60.251, § 60.252(b)(1) and (c), § 60.253(b), § 60.254(b), § 60.255(b) through (h), § 60.256(b) and (c), § 60.257, and § 60.258 of this subpart are applicable to any of the following affected facilities that commenced construction, reconstruction or modification after April 28, 2008, and on or before May 27, 2009: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems, transfer and loading systems.

(d) The provisions in § 60.251, § 60.252(b)(1) through (3), and (c), § 60.253(b), § 60.254(b) and (c), § 60.255(b) through (h), § 60.256(b) and (c), § 60.257, and § 60.258 of this subpart are applicable to any of the following affected facilities that commenced construction, reconstruction or modification after May 27, 2009: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, transfer and loading systems, and open storage piles.

§ 60.251 Definitions.

As used in this subpart, all terms not defined herein have the meaning given them in the Clean Air Act (Act) and in subpart A of this part.

(a) *Anthracite* means coal that is classified as anthracite according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, *see* § 60.17).

(b) *Bag leak detection system* means a system that is capable of continuously monitoring relative particulate matter (dust loadings) in the exhaust of a fabric filter to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

(c) *Bituminous coal* means solid fossil fuel classified as bituminous coal by ASTM D388 (incorporated by reference—*see* § 60.17).

(d) *Coal* means:

(1) For units constructed, reconstructed, or modified on or before May 27, 2009, all solid fossil fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388 (incorporated by reference—*see* § 60.17).

(2) For units constructed, reconstructed, or modified after May 27, 2009, all solid fossil fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388 (incorporated by reference—*see* § 60.17), and coal refuse.

(e) *Coal preparation and processing plant* means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying.

(f) *Coal processing and conveying equipment* means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts. Equipment located at the mine face is not considered to be part of the coal preparation and processing plant.

(g) *Coal refuse* means waste products of coal mining, physical coal cleaning, and coal preparation operations (*e.g.* culm, gob, *etc.*) containing coal, matrix material, clay, and other organic and inorganic material.

(h) *Coal storage system* means any facility used to store coal except for open storage piles.

(i) *Design controlled potential PM emissions rate* means the theoretical particulate matter (PM) emissions (Mg) that would result from the operation of a control device at its design emissions rate (grams per dry standard cubic meter (g/dscm)), multiplied by the maximum design flow rate (dry standard cubic meter per minute (dscm/min)), multiplied by 60 (minutes per hour (min/hr)), multiplied by 8,760 (hours per year (hr/yr)), divided by 1,000,000 (megagrams per gram (Mg/g)).

(j) *Indirect thermal dryer* means a thermal dryer that reduces the moisture content of coal through indirect heating of the coal through contact with a heat transfer medium. If the source of heat (the source of combustion or furnace) is subject to another subpart of this part, then the furnace and the associated emissions are not part of the affected facility. However, if the source of heat is not subject to another subpart of this part, then the furnace and the associated emissions are part of the affected facility.

(k) *Lignite* means coal that is classified as lignite A or B according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, *see* § 60.17).

(l) *Mechanical vent* means any vent that uses a powered mechanical drive (machine) to induce air flow.

(m) *Open storage pile* means any facility, including storage area, that is not enclosed that is used to store coal, including the equipment used in the loading, unloading, and conveying operations of the facility.

(n) *Operating day* means a 24-hour period between 12 midnight and the following midnight during which coal is prepared or processed at any time by the affected facility. It is not necessary that coal be prepared or processed the entire 24-hour period.

(o) *Pneumatic coal-cleaning equipment* means:

(1) For units constructed, reconstructed, or modified on or before May 27, 2009, any facility which classifies bituminous coal by size or separates bituminous coal from refuse by application of air stream(s).

(2) For units constructed, reconstructed, or modified after May 27, 2009, any facility which classifies coal by size or separates coal from refuse by application of air stream(s).

(p) *Potential combustion concentration* means the theoretical emissions (nanograms per joule (ng/J) or pounds per million British thermal units (lb/MMBtu) heat input) that would result from combustion of a fuel in an uncleaned state without emission control systems, as determined using Method 19 of appendix A–7 of this part.

(q) *Subbituminous coal* means coal that is classified as subbituminous A, B, or C according to the American Society of Testing and Materials in ASTM D388 (incorporated by reference, *see* § 60.17).

(r) *Thermal dryer* means:

(1) For units constructed, reconstructed, or modified on or before May 27, 2009, any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

(2) For units constructed, reconstructed, or modified after May 27, 2009, any facility in which the moisture content of coal is reduced by either contact with a heated gas stream which is exhausted to the atmosphere or through indirect heating of the coal through contact with a heated heat transfer medium.

(s) *Transfer and loading system* means any facility used to transfer and load coal for shipment.

§ 60.252 Standards for thermal dryers.

(a) On and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator of a thermal dryer constructed, reconstructed, or modified on or before April 28, 2008, subject to the provisions of this subpart must meet the requirements in paragraphs (a)(1) and (a)(2) of this section.

(1) The owner or operator shall not cause to be discharged into the atmosphere from the thermal dryer any gases which contain PM in excess of 0.070 g/dscm (0.031 grains per dry standard cubic feet (gr/dscf)); and

(2) The owner or operator shall not cause to be discharged into the atmosphere from the thermal dryer any gases which exhibit 20 percent opacity or greater.

(b) Except as provided in paragraph (c) of this section, on and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator of a thermal dryer constructed, reconstructed, or modified after April 28, 2008, subject to the provisions of this subpart must meet the applicable standards for PM and opacity, as specified in paragraph (b)(1) of this section. In addition, and except as provided in paragraph (c) of this section, on and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator of a thermal dryer constructed, reconstructed, or modified after May 29, 2009, subject to the provisions of this subpart must also meet the applicable standards for sulfur dioxide (SO_2), and combined nitrogen oxides (NO_X) and carbon monoxide (CO) as specified in paragraphs (b)(2) and (b)(3) of this section.

(1) The owner or operator must meet the requirements for PM emissions in paragraphs (b)(1)(i) through (iii) of this section, as applicable to the affected facility.

(i) For each thermal dryer constructed or reconstructed after April 28, 2008, the owner or operator must meet the requirements of (b)(1)(i)(A) and (b)(1)(i)(B).

(A) The owner or operator must not cause to be discharged into the atmosphere from the thermal dryer any gases that contain PM in excess of 0.023 g/dscm (0.010 grains per dry standard cubic feet (gr/dscf)); and

(B) The owner or operator must not cause to be discharged into the atmosphere from the thermal dryer any gases that exhibit 10 percent opacity or greater.

(ii) For each thermal dryer modified after April 28, 2008, the owner or operator must meet the requirements of paragraphs (b)(1)(ii)(A) and (b)(1)(ii)(B) of this section.

(A) The owner or operator must not cause to be discharged to the atmosphere from the affected facility any gases which contain PM in excess of 0.070 g/dscm (0.031 gr/dscf); and

(B) The owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 20 percent opacity or greater.

(2) Except as provided in paragraph (b)(2)(iii) of this section, for each thermal dryer constructed, reconstructed, or modified after May 27, 2009, the owner or operator must meet the requirements for SO_2 emissions in either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) The owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 85 ng/J (0.20 lb/MMBtu) heat input; or

(ii) The owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases that either contain SO_2 in excess of 520 ng/J (1.20 lb/MMBtu) heat input or contain SO_2 in excess of 10 percent of the potential combustion concentration (*i.e.*, the facility must achieve at least a 90 percent reduction of the potential combustion concentration and may not exceed a maximum emissions rate of 1.2 lb/MMBtu (520 ng/J)).

(iii) Thermal dryers that receive all of their thermal input from a source other than coal or residual oil, that receive all of their thermal input from a source subject to an SO_2 limit under another subpart of this part, or that use waste heat or residual from the combustion of coal or residual oil as their only thermal input are not subject to the SO_2 limits of this section.

(3) Except as provided in paragraph (b)(3)(iii) of this section, the owner or operator must meet the requirements for combined NO_X and CO emissions in paragraph (b)(3)(i) or (b)(3)(ii) of this section, as applicable to the affected facility.

(i) For each thermal dryer constructed after May 27, 2009, the owner

or operator must not cause to be discharged into the atmosphere from the affected facility any gases which contain a combined concentration of NO_X and CO in excess of 280 ng/J (0.65 lb/MMBtu) heat input.

(ii) For each thermal dryer reconstructed or modified after May 27, 2009, the owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases which contain combined concentration of NO_X and CO in excess of 430 ng/J (1.0 lb/MMBtu) heat input.

(iii) Thermal dryers that receive all of their thermal input from a source other than coal or residual oil, that receive all of their thermal input from a source subject to a NO_X limit and/or CO limit under another subpart of this part, or that use waste heat or residual from the combustion of coal or residual oil as their only thermal input, are not subject to the combined NO_X and CO limits of this section.

(c) Thermal dryers receiving all of their thermal input from an affected facility covered under another 40 CFR Part 60 subpart must meet the applicable requirements in that subpart but are not subject to the requirements in this subpart.

§ 60.253 Standards for pneumatic coal-cleaning equipment.

(a) On and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator of pneumatic coal-cleaning equipment constructed, reconstructed, or modified on or before April 28, 2008, must meet the requirements of paragraphs (a)(1) and (a)(2) of this section.

(1) The owner or operator must not cause to be discharged into the atmosphere from the pneumatic coal-cleaning equipment any gases that contain PM in excess of 0.040 g/dscm (0.017 gr/dscf); and

(2) The owner or operator must not cause to be discharged into the atmosphere from the pneumatic coal-cleaning equipment any gases that exhibit 10 percent opacity or greater.

(b) On and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator of pneumatic coal-cleaning equipment constructed, reconstructed, or modified after April 28, 2008, must meet the requirements in paragraphs (b)(1) and (b)(2) of this section.

(1) The owner of operator must not cause to be discharged into the atmosphere from the pneumatic coal-cleaning equipment any gases that contain PM in excess or 0.023 g/dscm (0.010 gr/dscf); and

(2) The owner or operator must not cause to be discharged into the atmosphere from the pneumatic coal-cleaning equipment any gases that exhibit greater than 5 percent opacity.

§ 60.254 Standards for coal processing and conveying equipment, coal storage systems, transfer and loading systems, and open storage piles.

(a) On and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, reconstructed, or modified on or before April 28, 2008, gases which exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test is conducted or required to be completed under § 60.8, whichever date comes first, an owner or operator of any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, reconstructed, or modified after April 28, 2008, must meet the requirements in paragraphs (b)(1) through (3) of this section, as applicable to the affected facility.

(1) Except as provided in paragraph (b)(3) of this section, the owner or operator must not cause to be discharged into the atmosphere from the affected facility any gases which exhibit 10 percent opacity or greater.

(2) The owner or operator must not cause to be discharged into the atmosphere from any mechanical vent on an affected facility gases which contain particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf).

(3) Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the opacity limitations of paragraph (b)(1) of this section.

(c) The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions as specified in paragraphs (c)(1) through (6) of this section.

(1) The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile.

(2) For open coal storage piles, the fugitive coal dust emissions control plan must require that one or more of the following control measures be used to minimize to the greatest extent practicable fugitive coal dust: Locating the source inside a partial enclosure, installing and operating a water spray or fogging system, applying appropriate chemical dust suppression agents on the source (when the provisions of paragraph (c)(6) of this section are met), use of a wind barrier, compaction, or use of a vegetative cover. The owner or operator must select, for inclusion in the fugitive coal dust emissions control plan, the control measure or measures listed in this paragraph that are most appropriate for site conditions. The plan must also explain how the measure or measures selected are applicable and appropriate for site conditions. In addition, the plan must be revised as needed to reflect any changing conditions at the source.

(3) Any owner or operator of an affected facility that is required to have a fugitive coal dust emissions control plan may petition the Administrator to approve, for inclusion in the plan for the affected facility, alternative control measures other than those specified in paragraph (c)(2) of this section as specified in paragraphs (c)(3)(i) through (iv) of this section.

(i) The petition must include a description of the alternative control measures, a copy of the fugitive coal dust emissions control plan for the affected facility that includes the alternative control measures, and information sufficient for EPA to evaluate the demonstrations required by paragraph (c)(3)(ii) of this section.

(ii) The owner or operator must either demonstrate that the fugitive coal dust emissions control plan that includes the alternate control measures will provide equivalent overall environmental protection or demonstrate that it is either economically or technically infeasible for the affected facility to use the control measures specifically identified in paragraph (c)(2).

(iii) While the petition is pending, the owner or operator must comply with the fugitive coal dust emissions control plan including the alternative control measures submitted with the petition. Operation in accordance with the plan submitted with the petition shall be deemed to constitute compliance with the requirement to operate in accordance with a fugitive coal dust emissions control plan that contains one of the control measures specifically identified in paragraph (c)(2) of this section while the petition is pending.

(iv) If the petition is approved by the Administrator, the alternative control measures will be approved for inclusion in the fugitive coal dust emissions control plan for the affected facility. In lieu of amending this subpart, a letter will be sent to the facility describing the specific control measures approved. The facility shall make any such letters and the applicable fugitive coal dust emissions control plan available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

(4) The owner or operator must submit the fugitive coal dust emissions control plan to the Administrator or delegated authority as specified in paragraphs (c)(4)(i) and (c)(4)(ii) of this section.

(i) The plan must be submitted to the Administrator or delegated authority

prior to startup of the new, reconstructed, or modified affected facility, or 30 days after the effective date of this rule, whichever is later.

(ii) The plan must be revised as needed to reflect any changing conditions at the source. Such revisions must be dated and submitted to the Administrator or delegated authority before a source can operate pursuant to these revisions. The Administrator or delegated authority may also object to such revisions as specified in paragraph (c)(5) of this section.

(5) The Administrator or delegated authority may object to the fugitive coal dust emissions control plan as specified in paragraphs (c)(5)(i) and (c)(5)(ii) of this section.

(i) The Administrator or delegated authority may object to any fugitive coal dust emissions control plan that it has determined does not meet the requirements of paragraphs (c)(1) and (c)(2) of this section.

(ii) If an objection is raised, the owner or operator, within 30 days from receipt of the objection, must submit a revised fugitive coal dust emissions control plan to the Administrator or delegated authority. The owner or operator must operate in accordance with the revised fugitive coal dust emissions control plan. The Administrator or delegated authority retain the right, under paragraph (c)(5) of this section, to object to the revised control plan if it determines the plan does not meet the requirements of paragraphs (c)(1) and (c)(2) of this section.

(6) Where appropriate chemical dust suppression agents are selected by the owner or operator as a control measure to minimize fugitive coal dust emissions, (1) only chemical dust suppressants with Occupational Safety and Health Administration (OSHA)-compliant material safety data sheets (MSDS) are to be allowed; (2) the MSDS must be included in the fugitive coal dust emissions control plan; and (3) the owner or operator must consider and document in the fugitive coal dust emissions control plan the site-specific impacts associated with the use of such chemical dust suppressants.

§ 60.255 Performance tests and other compliance requirements.

(a) An owner or operator of each affected facility that commenced construction, reconstruction, or modification on or before April 28, 2008, must conduct all performance tests required by § 60.8 to demonstrate compliance with the applicable emission standards using the methods identified in § 60.257.

(b) An owner or operator of each affected facility that commenced construction, reconstruction, or modification after April 28, 2008, must conduct performance tests according to the requirements of § 60.8 and the methods identified in § 60.257 to demonstrate compliance with the applicable emissions standards in this subpart as specified in paragraphs (b)(1) and (2) of this section.

(1) For each affected facility subject to a PM, SO_2, or combined NO_X and CO emissions standard, an initial performance test must be performed. Thereafter, a new performance test must be conducted according the requirements in paragraphs (b)(1)(i) through (iii) of this section, as applicable.

(i) If the results of the most recent performance test demonstrate that emissions from the affected facility are greater than 50 percent of the applicable emissions standard, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed.

(ii) If the results of the most recent performance test demonstrate that emissions from the affected facility are 50 percent or less of the applicable emissions standard, a new performance test must be conducted within 24 calendar months of the date that the previous performance test was required to be completed.

(iii) An owner or operator of an affected facility that has not operated for the 60 calendar days prior to the due date of a performance test is not required to perform the subsequent performance test until 30 calendar days after the next operating day.

(2) For each affected facility subject to an opacity standard, an initial performance test must be performed. Thereafter, a new performance test

must be conducted according to the requirements in paragraphs (b)(2)(i) through (iii) of this section, as applicable, except as provided for in paragraphs (e) and (f) of this section. Performance test and other compliance requirements for coal truck dump operations are specified in paragraph (h) of this section.

(i) If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed.

(ii) If all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed.

(iii) An owner or operator of an affected facility continuously monitoring scrubber parameters as specified in § 60.256(b)(2) is exempt from the requirements in paragraphs (b)(2)(i) and (ii) if opacity performance tests are conducted concurrently with (or within a 60-minute period of) PM performance tests.

(c) If any affected coal processing and conveying equipment (*e.g.*, breakers, crushers, screens, conveying systems), coal storage systems, or coal transfer and loading systems that commenced construction, reconstruction, or modification after April 28, 2008, are enclosed in a building, and emissions from the building do not exceed any of the standards in § 60.254 that apply to the affected facility, then the facility shall be deemed to be in compliance with such standards.

(d) An owner or operator of an affected facility (other than a thermal dryer) that commenced construction, reconstruction, or modification after April 28, 2008, is subject to a PM emission standard and uses a control device with a design controlled potential PM emissions rate of 1.0 Mg (1.1 tons) per year or less is exempted from the requirements of paragraphs (b)(1)(i) and (ii) of this section provided that the owner or operator meets all of the conditions specified in paragraphs (d)(1) through (3) of this section. This exemption does not apply to thermal dryers.

(1) PM emissions, as determined by the most recent performance test, are less than or equal to the applicable limit,

(2) The control device manufacturer's recommended maintenance procedures are followed, and

(3) All 6-minute average opacity readings from the most recent performance test are equal to or less than half the applicable opacity limit or the monitoring requirements in paragraphs (e) or (f) of this section are followed.

(e) For an owner or operator of a group of up to five of the same type of affected facilities that commenced construction, reconstruction, or modification after April 28, 2008, that are subject to PM emissions standards and use identical control devices, the Administrator or delegated authority may allow the owner or operator to use a single PM performance test for one of the affected control devices to demonstrate that the group of affected facilities is in compliance with the applicable emissions standards provided that the owner or operator meets all of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) PM emissions from the most recent performance test for each individual affected facility are 90 percent or less of the applicable PM standard;

(2) The manufacturer's recommended maintenance procedures are followed for each control device; and

(3) A performance test is conducted on each affected facility at least once every 5 calendar years.

(f) As an alternative to meeting the requirements in paragraph (b)(2) of this section, an owner or operator of an affected facility that commenced construction, reconstruction, or modification after April 28, 2008, may elect to comply with the requirements in paragraph (f)(1) or (f)(2) of this section.

(1) Monitor visible emissions from each affected facility according to the requirements in paragraphs (f)(1)(i) through (iii) of this section.

(i) Conduct one daily 15-second observation each operating day for each affected facility (during normal operation) when the coal preparation and processing plant is in operation. Each

observation must be recorded as either visible emissions observed or no visible emissions observed. Each observer determining the presence of visible emissions must meet the training requirements specified in § 2.3 of Method 22 of appendix A–7 of this part. If visible emissions are observed during any 15-second observation, the owner or operator must adjust the operation of the affected facility and demonstrate within 24 hours that no visible emissions are observed from the affected facility. If visible emissions are observed, a Method 9, of appendix A–4 of this part, performance test must be conducted within 45 operating days.

(ii) Conduct monthly visual observations of all process and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible.

(iii) Conduct a performance test using Method 9 of appendix A–4 of this part at least once every 5 calendar years for each affected facility.

(2) Prepare a written site-specific monitoring plan for a digital opacity compliance system for approval by the Administrator or delegated authority. The plan shall require observations of at least one digital image every 15 seconds for 10-minute periods (during normal operation) every operating day. An approvable monitoring plan must include a demonstration that the occurrences of visible emissions are not in excess of 5 percent of the observation period. For reference purposes in preparing the monitoring plan, *see* OAQPS ''Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.'' This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. The monitoring plan approved by the Administrator or delegated authority shall be implemented by the owner or operator.

(g) As an alternative to meeting the requirements in paragraph (b)(2) of this section, an owner or operator of an affected facility that commenced construction, reconstruction, or modification after April 28, 2008, subject to a visible emissions standard under this subpart may install, operate, and maintain a continuous opacity monitoring system (COMS). Each COMS used to comply with provisions of this subpart must be installed, calibrated, maintained, and continuously operated according to the requirements in paragraphs (g)(1) and (2) of this section.

(1) The COMS must meet Performance Specification 1 in 40 CFR part 60, appendix B.

(2) The COMS must comply with the quality assurance requirements in paragraphs (g)(2)(i) through (v) of this section.

(i) The owner or operator must automatically (intrinsic to the opacity monitor) check the zero and upscale (span) calibration drifts at least once daily. For particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of Performance Specification 1 in 40 CFR part 60, appendix B.

(ii) The owner or operator must adjust the zero and span whenever the 24-hour zero drift or 24-hour span drift exceeds 4 percent opacity. The COMS must allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. The optical surfaces exposed to the effluent gases must be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. For systems using automatic zero adjustments, the optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(iii) The owner or operator must apply a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. All procedures applied must provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(iv) Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS must be in continuous operation and must 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.

(v) The owner or operator must reduce all data from the COMS to 6-minute averages. Six-minute opacity averages must be calculated from 36 or more data points equally spaced over each 6-minute period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments must not be included in the data averages. An arithmetic or integrated average of all data may be used.

(h) The owner or operator of each affected coal truck dump operation that commenced construction, reconstruction, or modification after April 28, 2008, must meet the requirements specified in paragraphs (h)(1) through (3) of this section.

(1) Conduct an initial performance test using Method 9 of appendix A–4 of this part according to the requirements in paragraphs (h)(1)(i) and(ii).

(i) Opacity readings shall be taken during the duration of three separate truck dump events. Each truck dump event commences when the truck bed begins to elevate and concludes when the truck bed returns to a horizontal position.

(ii) Compliance with the applicable opacity limit is determined by averaging all 15-second opacity readings made during the duration of three separate truck dump events.

(2) Conduct monthly visual observations of all process and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible.

(3) Conduct a performance test using Method 9 of appendix A–4 of this part at least once every 5 calendar years for each affected facility.

§ 60.256 Continuous monitoring requirements.

(a) The owner or operator of each affected facility constructed, reconstructed, or modified on or before April 28, 2008, must meet the monitoring requirements specified in paragraphs (a)(1) and (2) of this section, as applicable to the affected facility.

(1) The owner or operator of any thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(i) A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within ±1.7 °C (±3 °F).

(ii) For affected facilities that use wet scrubber emission control equipment:

(A) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±1 inch water gauge.

(B) A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of design water supply pressure. The pressure sensor or tap must be located close to the water discharge point. The Administrator shall have discretion to grant requests for approval of alternative monitoring locations.

(2) All monitoring devices under paragraph (a) of this section are to be recalibrated annually in accordance with procedures under § 60.13(b).

(b) The owner or operator of each affected facility constructed, reconstructed, or modified after April 28, 2008, that has one or more mechanical vents must install, calibrate, maintain, and continuously operate the monitoring devices specified in paragraphs (b)(1) through (3) of this section, as applicable to the mechanical vent and any control device installed on the vent.

(1) For mechanical vents with fabric filters (baghouses) with design controlled potential PM emissions rates of 25 Mg (28 tons) per year or more, a bag leak detection system according to the requirements in paragraph (c) of this section.

(2) For mechanical vents with wet scrubbers, monitoring devices according to the requirements in paragraphs (b)(2)(i) through (iv) of this section.

(i) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±1 inch water gauge.

(ii) A monitoring device for the continuous measurement of the water supply flow rate to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of design water supply flow rate.

(iii) A monitoring device for the continuous measurement of the pH of the wet scrubber liquid. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of design pH.

(iv) An average value for each monitoring parameter must be determined during each performance test. Each monitoring parameter must then be maintained within 10 percent of the value established during the most recent performance test on an operating day average basis.

(3) For mechanical vents with control equipment other than wet scrubbers, a monitoring device for the continuous measurement of the reagent injection flow rate to the control equipment, as applicable. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of design injection flow rate. An average reagent injection flow rate value must be determined during each performance test. The reagent injection flow rate must then be maintained within 10 percent of the value established during the most recent performance test on an operating day average basis.

(c) Each bag leak detection system used to comply with provisions of this subpart must be installed, calibrated, maintained, and continuously operated according to the requirements in paragraphs (c)(1) through (3) of this section.

(1) The bag leak detection system must meet the specifications and requirements in paragraphs (c)(1)(i) through (viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (mg/dscm) (0.00044 grains per actual cubic foot (gr/acf)) or less.

(ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (*e.g.*, using a strip chart recorder or a data logger).

(iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (c)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(v) Following initial adjustment, the owner or operator must not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (c)(2)(vi) of this section.

(vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (c)(2) of this section.

(vii) The owner or operator must install the bag leak detection sensor downstream of the fabric filter.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(2) The owner or operator must develop and submit to the Administrator or delegated authority for approval a site-specific monitoring plan for each bag leak detection system. This plan

must be submitted to the Administrator or delegated authority 30 days prior to startup of the affected facility. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (c)(2)(i) through (vi) of this section.

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system, including quality assurance procedures;

(iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(v) How the bag leak detection system output will be recorded and stored; and

(vi) Corrective action procedures as specified in paragraph (c)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow the owner and operator more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(3) For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (c)(2)(vi) of this section, the owner or operator must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM 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 fabric filter compartment;

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(vi) Shutting down the process producing the PM emissions.

§ 60.257 Test methods and procedures.

(a) The owner or operator must determine compliance with the applicable opacity standards as specified in paragraphs (a)(1) through (3) of this section.

(1) Method 9 of appendix A–4 of this part and the procedures in § 60.11 must be used to determine opacity, with the exceptions specified in paragraphs (a)(1)(i) and (ii).

(i) The duration of the Method 9 of appendix A–4 of this part performance test shall be 1 hour (ten 6-minute averages).

(ii) If, during the initial 30 minutes of the observation of a Method 9 of appendix A–4 of this part performance test, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes.

(2) To determine opacity for fugitive coal dust emissions sources, the additional requirements specified in paragraphs (a)(2)(i) through (iii) must be used.

(i) The minimum distance between the observer and the emission source shall be 5.0 meters (16 feet), and the sun shall be oriented in the 140-degree sector of the back.

(ii) The observer shall select a position that minimizes interference from other fugitive coal dust emissions sources and make observations such that the line of vision is approximately perpendicular to the plume and wind direction.

(iii) The observer shall make opacity observations at the point of greatest opacity in that portion of the plume where condensed water vapor is not

present. Water vapor is not considered a visible emission.

(3) A visible emissions observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions specified in paragraphs (a)(3)(i) through (iii) of this section are met.

(i) No more than three emissions points may be read concurrently.

(ii) All three emissions points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(iii) If an opacity reading for any one of the three emissions points is within 5 percent opacity from the applicable standard (excluding readings of zero opacity), then the observer must stop taking readings for the other two points and continue reading just that single point.

(b) The owner or operator must conduct all performance tests required by § 60.8 to demonstrate compliance with the applicable emissions standards specified in § 60.252 according to the requirements in § 60.8 using the applicable test methods and procedures in paragraphs (b)(1) through (8) of this section.

(1) Method 1 or 1A of appendix A–4 of this part shall be used to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(2) Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A–4 of this part shall be used to determine the volumetric flow rate of the stack gas.

(3) Method 3, 3A, or 3B of appendix A–4 of this part shall be used to determine the dry molecular weight of the stack gas. The owner or operator may use ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses (incorporated by reference—*see* § 60.17) as an alternative to Method 3B of appendix A–2 of this part.

(4) Method 4 of appendix A–4 of this part shall be used to determine the moisture content of the stack gas.

(5) Method 5, 5B or 5D of appendix A–4 of this part or Method 17 of appendix A–7 of this part shall be used to determine the PM concentration as follows:

(i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin. A minimum of three valid test runs are needed to comprise a PM performance test.

(ii) Method 5 of appendix A of this part shall be used only to test emissions from affected facilities without wet flue gas desulfurization (FGD) systems.

(iii) Method 5B of appendix A of this part is to be used only after wet FGD systems.

(iv) Method 5D of appendix A–4 of this part shall be used for positive pressure fabric filters and other similar applications (*e.g.*, stub stacks and roof vents).

(v) Method 17 of appendix A–6 of this part may be used at facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A–3 of this part may be used in Method 17 of appendix A–6 of this part only if it is used after a wet FGD system. Do not use Method 17 of appendix A–6 of this part after wet FGD systems if the effluent is saturated or laden with water droplets.

(6) Method 6, 6A, or 6C of appendix A–4 of this part shall be used to determine the SO_2 concentration. A minimum of three valid test runs are needed to comprise an SO_2 performance test.

(7) Method 7 or 7E of appendix A–4 of this part shall be used to determine the NO_X concentration. A minimum of three valid test runs are needed to comprise an NO_X performance test.

(8) Method 10 of appendix A–4 of this part shall be used to determine the CO concentration. A minimum of three valid test runs are needed to comprise a CO performance test. CO performance tests are conducted concurrently (or within a 60-minute period) with NO_X performance tests.

§ 60.258 Reporting and recordkeeping.

(a) The owner or operator of a coal preparation and processing plant that commenced construction, reconstruction, or modification after April 28, 2008, shall maintain in a logbook (written or electronic) on-site and make it available upon request. The logbook shall record the following:

(1) The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted.

(2) The date and time of periodic coal preparation and processing plant visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted.

(3) The amount and type of coal processed each calendar month.

(4) The amount of chemical stabilizer or water purchased for use in the coal preparation and processing plant.

(5) Monthly certification that the dust suppressant systems were operational when any coal was processed and that manufacturer's recommendations were followed for all control systems. Any variance from the manufacturer's recommendations, if any, shall be noted.

(6) Monthly certification that the fugitive coal dust emissions control plan was implemented as described. Any variance from the plan, if any, shall be noted. A copy of the applicable fugitive coal dust emissions control plan and any letters from the Administrator providing approval of any alternative control measures shall be maintained with the logbook. Any actions, *e.g.* objections, to the plan and any actions relative to the alternative control measures, *e.g.* approvals, shall be noted in the logbook as well.

(7) For each bag leak detection system, the owner or operator must keep the records specified in paragraphs (a)(7)(i) through (iii) of this section.

(i) Records of the bag leak detection system output;

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection settings; and

(iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.

(8) A copy of any applicable monitoring plan for a digital opacity compliance system and monthly certification that the plan was implemented as described. Any variance from plan, if any, shall be noted.

(9) During a performance test of a wet scrubber, and each operating day thereafter, the owner or operator shall record the measurements of the scrubber pressure loss, water supply flow rate, and pH of the wet scrubber liquid.

(10) During a performance test of control equipment other than a wet scrubber, and each operating day thereafter, the owner or operator shall record the measurements of the reagent injection flow rate, as applicable.

(b) For the purpose of reports required under section 60.7(c), any owner operator subject to the provisions of this subpart also shall report semiannually periods of excess emissions as follow:

(1) The owner or operator of an affected facility with a wet scrubber shall submit semiannual reports to the Administrator or delegated authority of occurrences when the measurements of the scrubber pressure loss, water supply flow rate, or pH of the wet scrubber liquid vary by more than 10 percent from the average determined during the most recent performance test.

(2) The owner or operator of an affected facility with control equipment other than a wet scrubber shall submit semiannual reports to the Administrator or delegated authority of occurrences when the measurements of the reagent injection flow rate, as applicable, vary by more than 10 percent from the average determined during the most recent performance test.

(3) All 6-minute average opacities that exceed the applicable standard.

(c) The owner or operator of an affected facility shall submit the results of initial performance tests to the Administrator or delegated authority, consistent with the provisions of section 60.8. The owner or operator who elects to comply with the reduced performance testing provisions of sections 60.255(c) or (d) shall include in the performance test report identification of each affected facility that will be subject to the reduced testing. The owner or operator electing to comply with section 60.255(d) shall also include information which demonstrates that the control devices are identical.

(d) After July 1, 2011, within 60 days after the date of completing each performance evaluation conducted to demonstrate compliance with this subpart, the owner or operator of the affected facility must submit the test data to EPA by successfully entering the data electronically into EPA's WebFIRE data base available at *http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main*. For performance tests that cannot be entered into WebFIRE (*i.e.*, Method 9 of appendix A–4 of this part opacity performance tests) the owner or operator of the affected facility must mail a summary copy to United States Environmental Protection Agency; Energy Strategies Group; 109 TW Alexander DR; mail code: D243–01; RTP, NC 27711.

Subpart Z—Standards of Performance for Ferroalloy Production Facilities

SOURCE: 41 FR 18501, May 4, 1976, unless otherwise noted.

§ 60.260 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities: Electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 21, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977]

§ 60.261 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Electric submerged arc furnace* means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.

(b) *Furnace charge* means any material introduced into the electric submerged arc furnace, and may consist of, but is not limited to, ores, slag, carbonaceous material, and limestone.

(c) *Product change* means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under this subpart.

(d) *Slag* means the more or less completely fused and vitrified matter separated during the reduction of a metal from its ore.

(e) *Tapping* means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.

(f) *Tapping period* means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.

(g) *Furnace cycle* means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.

(h) *Tapping station* means that general area where molten product or slag is removed from the electric submerged arc furnace.

(i) *Blowing tap* means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner, or collection hood.

(j) *Furnace power input* means the resistive electrical power consumption of

an electric submerged arc furnace as measured in kilowatts.

(k) *Dust-handling equipment* means any equipment used to handle particulate matter collected by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this subpart.

(l) *Control device* means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.

(m) *Capture system* means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.

(n) *Standard ferromanganese* means that alloy as defined by ASTM Designation A99–76 or 82 (Reapproved 1987) (incorporated by reference—see § 60.17).

(o) *Silicomanganese* means that alloy as defined by ASTM Designation A483–64 or 74 (Reapproved 1988) (incorporated by reference—see § 60.17).

(p) *Calcium carbide* means material containing 70 to 85 percent calcium carbide by weight.

(q) *High-carbon ferrochrome* means that alloy as defined by ASTM Designation A101–73 or 93 (incorporated by reference—see § 60.17) grades HC1 through HC6.

(r) *Charge chrome* means that alloy containing 52 to 70 percent by weight chromium, 5 to 8 percent by weight carbon, and 3 to 6 percent by weight silicon.

(s) *Silvery iron* means any ferrosilicon, as defined by ASTM Designation A100–69, 74, or 93 (incorporated by reference—see § 60.17), which contains less than 30 percent silicon.

(t) *Ferrochrome silicon* means that alloy as defined by ASTM Designation A482–76 or 93 (incorporated by reference—see § 60.17).

(u) *Silicomanganese zirconium* means that alloy containing 60 to 65 percent by weight silicon, 1.5 to 2.5 percent by weight calcium, 5 to 7 percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, 5 to 7 percent by weight manganese, and 2 to 3 percent by weight barium.

(v) *Calcium silicon* means that alloy as defined by ASTM Designation A495–76 or 94 (incorporated by reference—see § 60.17).

(w) *Ferrosilicon* means that alloy as defined by ASTM Designation A100–69, 74, or 93 (incorporated by reference—see § 60.17) grades A, B, C, D, and E, which contains 50 or more percent by weight silicon.

(x) *Silicon metal* means any silicon alloy containing more than 96 percent silicon by weight.

(y) *Ferromanganese silicon* means that alloy containing 63 to 66 percent by weight manganese, 28 to 32 percent by weight silicon, and a maximum of 0.08 percent by weight carbon.

[41 FR 18501, May 4, 1976; 41 FR 20659, May 20, 1976, as amended at 48 FR 3738, Jan. 27, 1983; 65 FR 61758, Oct. 17, 2000]

§ 60.262 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:

(1) Exit from a control device and contain particulate matter in excess of 0.45 kg/MW-hr (0.99 lb/MW-hr) while silicon metal, ferrosilicon, calcium silicon, or silicomanganese zirconium is being produced.

(2) Exit from a control device and contain particulate matter in excess of 0.23 kg/MW-hr (0.51 lb/MW-hr) while highcarbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, calcium carbide, ferrochrome silicon, ferromanganese silicon, or silvery iron is being produced.

(3) Exit from a control device and exhibit 15 percent opacity or greater.

(4) Exit from an electric submerged arc furnace and escape the capture system and are visible without the aid of instruments. The requirements under this subparagraph apply only during periods when flow rates are being established under § 60.265(d).

(5) Escape the capture system at the tapping station and are visible without the aid of instruments for more than 40 percent of each tapping period. There

are no limitations on visible emissions under this subparagraph when a blowing tap occurs. The requirements under this subparagraph apply only during periods when flow rates are being established under § 60.265(d).

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit 10 percent opacity or greater.

§ 60.263 Standard for carbon monoxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged in to the atmosphere from any electric submerged arc furnace any gases which contain, on a dry basis, 20 or greater volume percent of carbon monoxide. Combustion of such gases under conditions acceptable to the Administrator constitutes compliance with this section. Acceptable conditions include, but are not limited to, flaring of gases or use of gases as fuel for other processes.

§ 60.264 Emission monitoring.

(a) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain and operate a continuous monitoring system for measurement of the opacity of emissions discharged into the atmosphere from the control device(s).

(b) For the purpose of reports required under § 60.7(c), the owner or operator shall report as excess emissions all six-minute periods in which the average opacity is 15 percent or greater.

(c) The owner or operator subject to the provisions of this subpart shall submit a written report of any product change to the Administrator. Reports of product changes must be postmarked not later than 30 days after implementation of the product change.

§ 60.265 Monitoring of operations.

(a) The owner or operator of any electric submerged arc furnace subject to the provisions of this subpart shall maintain daily records of the following information:

(1) Product being produced.

(2) Description of constituents of furnace charge, including the quantity, by weight.

(3) Time and duration of each tapping period and the identification of material tapped (slag or product.)

(4) All furnace power input data obtained under paragraph (b) of this section.

(5) All flow rate data obtained under paragraph (c) of this section or all fan motor power consumption and pressure drop data obtained under paragraph (e) of this section.

(b) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a device to measure and continuously record the furnace power input. The furnace power input may be measured at the output or input side of the transformer. The device must have an accuracy of ±5 percent over its operating range.

(c) The owner or operator subject to the provisions of this subpart shall install, calibrate, and maintain a monitoring device that continuously measures and records the volumetric flow rate through each separately ducted hood of the capture system, except as provided under paragraph (e) of this section. The owner or operator of an electric submerged arc furnace that is equipped with a water cooled cover which is designed to contain and prevent escape of the generated gas and particulate matter shall monitor only the volumetric flow rate through the capture system for control of emissions from the tapping station. The owner or operator may install the monitoring device(s) in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device must have an accuracy of ±10 percent over its normal operating range and must be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device relative to Methods 1 and 2 of appendix A to this part.

(d) When performance tests are conducted under the provisions of § 60.8 of this part to demonstrate compliance with the standards under §§ 60.262(a) (4) and (5), the volumetric flow rate through each separately ducted hood of the capture system must be determined using the monitoring device required under paragraph (c) of this section. The volumetric flow rates must be determined for furnace power input levels at 50 and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the volumetric flow rate at or above the appropriate levels for that furnace power input level determined during the most recent performance test. If emissions due to tapping are captured and ducted separately from emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the exhaust flow rates through the capture system over the tapping station at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be reestablished by conducting new performance tests under § 60.8 of this part.

(e) The owner or operator may as an alternative to paragraph (c) of this section determine the volumetric flow rate through each fan of the capture system from the fan power consumption, pressure drop across the fan and the fan performance curve. Only data specific to the operation of the affected electric submerged arc furnace are acceptable for demonstration of compliance with the requirements of this paragraph. The owner or operator shall maintain on file a permanent record of the fan performance curve (prepared for a specific temperature) and shall:

(1) Install, calibrate, maintain, and operate a device to continuously measure and record the power consumption of the fan motor (measured in kilowatts), and

(2) Install, calibrate, maintain, and operate a device to continuously measure and record the pressure drop across the fan. The fan power consumption and pressure drop measurements must be synchronized to allow real time comparisions of the data. The monitoring devices must have an accuracy of ±5 percent over their normal operating ranges.

(f) The volumetric flow rate through each fan of the capture system must be determined from the fan power consumption, fan pressure drop, and fan performance curve specified under paragraph (e) of this section, during any performance test required under § 60.8 to demonstrate compliance with the standards under §§ 60.262(a)(4) and (5). The owner or operator shall determine the volumetric flow rate at a representative temperature for furnace power input levels of 50 and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test for that furnace power input level. If emissions due to tapping are captured and ducted separately from emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be reestablished by conducting new performance tests under § 60.8. The Administrator may require the owner or operator to verify the fan performance curve by monitoring necessary fan operating parameters and determining the gas volume moved relative to Methods 1 and 2 of appendix A to this part.

(g) All monitoring devices required under paragraphs (c) and (e) of this section are to be checked for calibration annually in accordance with the procedures under § 60.13(b).

§ 60.266 Test methods and procedures.

(a) During any performance test required in § 60.8, the owner or operator shall not allow gaseous diluents to be added to the effluent gas stream after the fabric in an open pressurized fabric filter collector unless the total gas volume flow from the collector is accurately determined and considered in the determination of emissions.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.262 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = \left[\left(\sum_{i=1}^{N} C_{si}\, Q_{sdi}\right)\right] / (PK)$$

where:

E=emission rate of particulate matter, kg/MW-hr (1b/MW-hr).

n=total number of exhaust streams at which emissions are quantified.

c_{si}=concentration of particulate matter from exhaust stream ''i'', g/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from exhaust stream ''i'', dscm/hr (dscf/hr).

P=average furnace power input, MW.

K=conversion factor, 1000 g/kg (7000 gr/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas, except that the heating systems specified in sections 2.1.2 and 2.1.6 are not to be used when the carbon monoxide content of the gas stream exceeds 10 percent by volume, dry basis. If a flare is used to comply with § 60.263, the sampling site shall be upstream of the flare. The sampling time shall include an integral number of furnace cycles.

(i) When sampling emissions from open electric submerged arc furnaces with wet scrubber control devices, sealed electric submerged arc furnaces, or semienclosed electric arc furnaces, the sampling time and sample volume for each run shall be at least 60 minutes and 1.80 dscm (63.6 dscf).

(ii) When sampling emissions from other types of installations, the sampling time and sample volume for each run shall be at least 200 minutes and 5.66 dscm (200 dscf).

(3) The measurement device of § 60.265(b) shall be used to determine the average furnace power input (P) during each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(5) The emission rate correction factor, integrated sampling procedure of Method 3B shall be used to determine the CO concentration. The sample shall be taken simultaneously with each particulate matter sample.

(d) During the particulate matter run, the maximum open hood area (in hoods with segmented or otherwise moveable sides) under which the process is expected to be operated and remain in compliance with all standards shall be recorded. Any future operation of the hooding system with open areas in excess of the maximum is not permitted.

(e) To comply with § 60.265 (d) or (f), the owner or operator shall use the monitoring devices in § 60.265 (c) or (e) to make the required measurements as determined during the performance test.

[54 FR 6671, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61758, Oct. 17, 2000]

Subpart AA—Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974, and On or Before August 17, 1983

§ 60.270 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section

that commenced construction, modification, or reconstruction after October 21, 1974, and on or before August 17, 1983.

[49 FR 43843, Oct. 31, 1984]

§ 60.271 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Electric arc furnace (EAF)* means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.

(b) *Dust-handling equipment* means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this subpart.

(c) *Control device* means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(d) *Capture system* means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an EAF to the air pollution control device.

(e) *Charge* means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(f) *Charging period* means the time period commencing at the moment an EAF starts to open and ending either three minutes after the EAF roof is returned to its closed position or six minutes after commencement of opening of the roof, whichever is longer.

(g) *Tap* means the pouring of molten steel from an EAF.

(h) *Tapping period* means the time period commencing at the moment an EAF begins to pour molten steel and ending either three minutes after steel ceases to flow from an EAF, or six minutes after steel begins to flow, whichever is longer.

(i) *Meltdown and refining* means that phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(j) *Meltdown and refining period* means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods and times when power to the EAF is off.

(k) *Shop opacity* means the arithmetic average of 24 or more opacity observations of emissions from the shop taken in accordance with Method 9 of appendix A of this part for the applicable time periods.

(l) *Heat time* means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(m) *Shop* means the building which houses one or more EAF's.

(n) *Direct shell evacuation system* means any system that maintains a negative pressure within the EAF above the slag or metal and ducts these emissions to the control device.

(o) *Bag leak detection system* means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other conditions that result in increases in particulate loadings. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 64 FR 10109, Mar. 2, 1999; 70 FR 8530, Feb. 22, 2005]

§ 60.272 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an electric arc furnace any gases which:

(1) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf).

(2) Exit from a control device and exhibit three percent opacity or greater.

(3) Exit from a shop and, due solely to operations of any EAF(s), exhibit 6 percent opacity or greater except:

(i) Shop opacity less than 20 percent may occur during charging periods.

(ii) Shop opacity less than 40 percent may occur during tapping periods.

(iii) The shop opacity standards under paragraph (a)(3) of this section shall apply only during periods when the monitoring parameter limits specified in § 60.274(b) are being established according to § 60.274(c) and (g), unless the owner or operator elects to perform daily shop opacity observations in lieu of furnace static pressure monitoring as provided for under § 60.273(d).

(iv) Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under paragraph (a)(3) of this section shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit 10 percent opacity or greater.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 64 FR 10109, Mar. 2, 1999]

§ 60.273 Emission monitoring.

(a) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart.

(b) For the purpose of reports under § 60.7(c), all six-minute periods during which the average opacity is three percent or greater shall indicate a period of excess emission, and shall be reported to the Administrator semi-annually.

(c) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) is not required on any modular, multi-stack, negative-pressure or positive-pressure fabric filter if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer; or on any single-stack fabric filter if visible emissions from the control device are performed by a certified visible emission observer and the owner installs and continuously operates a bag leak detection system according to paragraph (e) of this section. Visible emission observations shall be conducted at least once per day for at least three 6-minute periods when the furnace is operating in the melting and refining period. All visible emissions observations shall be conducted in accordance with Method 9 of appendix A to this part. If visible emissions occur from more than one point, the opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In that case, the Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a).

(d) A furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of shop opacity are performed by a certified visible emission observer as follows: Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period. Shop opacity shall be determined as the arithmetic average of 24 or more consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed in proximity to an affected EAF. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be

made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

(e) A bag leak detection system must be installed and continuously operated on all single-stack fabric filters if the owner or operator elects not to install and operate a continuous opacity monitoring system as provided for under paragraph (c) of this section. In addition, the owner or operator shall meet the visible emissions observation requirements in paragraph (c) of this section. The bag leak detection system must meet the specifications and requirements of paragraphs (e)(1) through (8) of this section.

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 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 particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (*e.g.*, using a strip chart recorder or a data logger.)

(3) The bag leak detection system must be equipped with an alarm system that will sound when an increase in relative particulate loading is detected over the alarm set point established according to paragraph (e)(4) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) For each bag leak detection system required by paragraph (e) of this section, the owner or operator shall develop and submit to the Administrator or delegated authority, for approval, a site-specific monitoring plan that addresses the items identified in paragraphs (i) through (v) of this paragraph (e)(4). For each bag leak detection system that operates based on the triboelectric effect, the monitoring plan shall be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document ''Fabric Filter Bag Leak Detection Guidance'' (EPA–454/R–98–015). The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan shall describe:

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system including quality assurance procedures;

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list; and

(v) How the bag leak detection system output shall be recorded and stored.

(5) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(6) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided for in paragraphs (e)(6)(i) and (ii) of this section.

(i) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects including temperature and humidity according to the procedures identified in the site-specific monitoring plan required under paragraphs (e)(4) of this section.

(ii) If opacities greater than zero percent are observed over four consecutive 15-second observations during the daily opacity observations required under paragraph (c) of this section and the alarm on the bag leak detection system does not sound, the owner or operator shall lower the alarm set point on the bag leak detection system to a point where the alarm would have sounded during the period when the opacity observations were made.

(7) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag

leak detection sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(f) For each bag leak detection system installed according to paragraph (e) of this section, the owner or operator shall initiate procedures to determine the cause of all alarms within 1 hour of an alarm. Except as provided for in paragraph (g) of this section, the cause of the alarm must be alleviated within 3 hours of the time the alarm occurred by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(1) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate emissions;

(2) Sealing off defective bags or filter media;

(3) Replacing defective bags or filter media or otherwise repairing the control device;

(4) Sealing off a defective baghouse compartment;

(5) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(6) Shutting down the process producing the particulate emissions.

(g) In approving the site-specific monitoring plan required in paragraph (e)(4) of this section, the Administrator or delegated authority may allow owners or operators more than 3 hours to alleviate specific conditions that cause an alarm if the owner or operator identifies the condition that could lead to an alarm in the monitoring plan, adequately explains why it is not feasible to alleviate the condition within 3 hours of the time the alarm occurred, and demonstrates that the requested additional time will ensure alleviation of the condition as expeditiously as practicable.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 54 FR 6672. Feb. 14, 1989; 64 FR 10109, Mar. 2, 1999; 70 FR 8530, Feb. 22, 2005]

§ 60.274 Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall maintain records daily of the following information:

(1) Time and duration of each charge;

(2) Time and duration of each tap;

(3) All flow rate data obtained under paragraph (b) of this section, or equivalent obtained under paragraph (d) of this section; and

(4) All pressure data obtained under paragraph (f) of this section.

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis furnace static pressure (if a DEC system is in use, and a furnace static pressure gauge is installed according to paragraph (f) of this section) and either: check and record the control system fan motor amperes and damper positions on a once-per-shift basis; install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check and record damper positions on a once-per-shift basis. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of appendix A of this part.

(c) When the owner or operator of an affected facility is required to demonstrate compliance with the standards under § 60.272(a)(3) and at any other time that the Administrator may require (under section 114 of the CAA, as amended) either: the control system fan motor amperes and all damper positions, the volumetric flow rate through each separately ducted hood, or the volumetric flow rate at the control device inlet and all damper positions

shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to paragraph (b) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of § 60.276(a).

(d) The owner or operator may petition the Administrator to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(e) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of hole in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

(f) Except as provided for under § 60.273(d), where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate, and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as 15-minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) Except as provided for under § 60.273(d), when the owner or operator of an EAF is required to demonstrate compliance with the standard under § 60.272(a)(3) and at any other time the Administrator may require (under section 114 of the Act, as amended), the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under paragraph (f) of this section. The owner or operator may petition the Administrator for reestablishment of the 15-minute integrated average pressure whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility.

(h) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this section.

(i) During any performance test required under § 60.8, and for any report thereof required by § 60.276(c) of this subpart or to determine compliance with § 60.272(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside the furnace where direct-shell evacuation systems are used;

(3) Control device operation log; and

(4) Continuous opacity monitor or Method 9 data.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 64 FR 10110, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000; 70 FR 8532, Feb. 22, 2005]

§ 60.275 Test methods and procedures.

(a) During performance tests required in § 60.8, the owner or operator shall not add gaseous diluent to the effluent gas after the fabric in any pressurized fabric collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also § 60.276(b)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall use either or both of the following procedures to demonstrate compliance with § 60.272(a)(3):

(1) Determine compliance using the combined emissions.

(2) Shut down operation of facilities not subject to the provisions of this subpart during the performance test.

(d) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in § 60.272 as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particular matter concentration and, if applicable, the volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.5 dscm (160 dscf) and, when a single EAF is sampled, the sampling time shall include an integral number of heats.

(2) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$c_{st} = \left[\sum_{i=1}^{n} \left(c_{si} \, Q_{sdi} \right) \right] / \sum_{i=1}^{n} Q_{sdi}$$

where:

c_{st}=average concentration of particulate matter, mg/dscm (gr/dscf).

c_{si}=concentration of particulate matter from control device ''i'', mg/dscm (gr/dscf).

n=total number of control devices tested.

Q_{sdi}=volumetric flow rate of stack gas from control device ''i'', dscm/hr (dscf/hr).

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(4) To demonstrate compliance with § 60.272(a) (1), (2), and (3), the Method 9 test runs shall be conducted concurrently with the particulate matter test runs, unless inclement weather interferes.

(f) To comply with § 60.274 (c), (f), (g), and (i), the owner or operator shall obtain the information in these paragraphs during the particulate matter runs.

(g) Where emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(1) Base compliance on control of the combined emissions.

(2) Utilize a method acceptable to the Administrator which compensates for the emissions from the facilities not subject to the provisions of this subpart.

(3) Any combination of the criteria of paragraphs (g)(1) and (g)(2) of this section.

(h) Where emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator may use any of the following procedures for demonstrating compliance with § 60.272(a)(3):

(1) Base compliance on control of the combined emissions.

(2) Shut down operation of facilities not subject to the provisions of this subpart.

(3) Any combination of the criteria of paragraphs (h)(1) and (h)(2) of this section.

(i) If visible emissions observations are made in lieu of using a continuous opacity monitoring system, as allowed for by § 60.273(c), visible emission observations shall be conducted at least once per day for at least three 6-minute periods when the furnace is operating in the melting and refining period. All visible emissions observations shall be conducted in accordance with Method 9. If visible emissions occur from more than one point, the opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In that case, the Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a).

(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under § 60.8 to demonstrate compliance with § 60.272(a) (1), (2), and (3) of this subpart.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43844, Oct. 31, 1984; 54 FR 6672, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 65 FR 61758, Oct. 17, 2000; 70 FR 8532, Feb. 22, 2005]

§ 60.276 Recordkeeping and reporting requirements.

(a) Operation at a furnace static pressure that exceeds the value established under § 60.274(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under § 60.274(c) or operation at flow rates lower than those established under § 60.274(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually.

(b) When the owner or operator of an EAF is required to demonstrate compliance with the standard under § 60.275 (b)(2) or a combination of (b)(1) and (b)(2), the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked at least 30 days prior to the performance test.

(c) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with § 60.272(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274(i) of this subpart;

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous opacity monitor or Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description of analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

(d) The owner or operator shall maintain records of all shop opacity observations made in accordance with § 60.273(d). All shop opacity observations in excess of the emission limit specified in § 60.272(a)(3) of this subpart shall indicate a period of excess emission, and shall be reported to the Administrator semi-annually, according to § 60.7(c).

(e) The owner or operator shall maintain the following records for each bag leak detection system required under § 60.273(e):

(1) Records of the bag leak detection system output;

(2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(3) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, if procedures were initiated within 1 hour of the alarm, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and if the alarm was alleviated within 3 hours of the alarm.

[49 FR 43844, Oct. 31, 1984, as amended at 54 FR 6672, Feb. 14, 1989; 64 FR 10110, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000; 70 FR 8532, Feb. 22, 2005]

Subpart AAa—Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983

SOURCE: 49 FR 43845, Oct. 31, 1984, unless otherwise noted.

§ 60.270a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after August 17, 1983.

§ 60.271a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Argon-oxygen decarburization vessel (AOD vessel) means any closed-bottom, refractory-lined converter vessel with submerged tuyeres through which gaseous mixtures containing argon and oxygen or nitrogen may be blown into molten steel for further refining.

Bag leak detection system means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other conditions that result in increases in particulate loadings. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Capture system means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an electric arc furnace or AOD vessel to the air pollution control device.

Charge means the addition of iron and steel scrap or other materials into the top of an electric arc furnace or the addition of molten steel or other materials into the top of an AOD vessel.

Control device means the air pollution control equipment used to remove particulate matter from the effluent gas stream generated by an electric arc furnace or AOD vessel.

Direct-shell evacuation control system (DEC system) means a system that

maintains a negative pressure within the electric arc furnace above the slag or metal and ducts emissions to the control device.

Dust-handling system means equipment used to handle particulate matter collected by the control device for an electric arc furnace or AOD vessel subject to this subpart. For the purposes of this subpart, the dust-handling system shall consist of the control device dust hoppers, the dust-conveying equipment, any central dust storage equipment, the dust-treating equipment (e.g., pug mill, pelletizer), dust transfer equipment (from storage to truck), and any secondary control devices used with the dust transfer equipment.

Electric arc furnace (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. For the purposes of this subpart, an EAF shall consist of the furnace shell and roof and the transformer. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.

Heat cycle means the period beginning when scrap is charged to an empty EAF and ending when the EAF tap is completed or beginning when molten steel is charged to an empty AOD vessel and ending when the AOD vessel tap is completed.

Meltdown and refining period means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods and times when power to the EAF is off.

Melting means that phase of steel production cycle during which the iron and steel scrap is heated to the molten state.

Negative-pressure fabric filter means a fabric filter with the fans on the downstream side of the filter bags.

Positive-pressure fabric filter means a fabric filter with the fans on the upstream side of the filter bags.

Refining means that phase of the steel production cycle during which undesirable elements are removed from the molten steel and alloys are added to reach the final metal chemistry.

Shop means the building which houses one or more EAF's or AOD vessels.

Shop opacity means the arithmetic average of 24 observations of the opacity of emissions from the shop taken in accordance with Method 9 of appendix A of this part.

Tap means the pouring of molten steel from an EAF or AOD vessel.

Tapping period means the time period commencing at the moment an EAF begins to pour molten steel and ending either three minutes after steel ceases to flow from an EAF, or six minutes after steel begins to flow, whichever is longer.

[49 FR 43845, Oct. 31, 1984, as amended at 64 FR 10110, Mar. 2, 1999; 70 FR 8532, Feb. 22, 2005]

§60.272a Standard for particulate matter.

(a) On and after the date of which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an EAF or an AOD vessel any gases which:

(1) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf);

(2) Exit from a control device and exhibit 3 percent opacity or greater; and

(3) Exit from a shop and, due solely to the operations of any affected EAF(s) or AOD vessel(s), exhibit 6 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the dust-handling system any gases that exhibit 10 percent opacity or greater.

§60.273a Emission monitoring.

(a) Except as provided under paragraphs (b) and (c) of this section, a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart.

(b) No continuous monitoring system shall be required on any control device serving the dust-handling system.

(c) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) is not required on any modular, multi-stack, negative-pressure or positive-pressure fabric filter if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer; or on any single-stack fabric filter if visible emissions from the control device are performed by a certified visible emission observer and the owner installs and continuously operates a bag leak detection system according to paragraph (e) of this section. Visible emission observations shall be conducted at least once per day for at least three 6-minute periods when the furnace is operating in the melting and refining period. All visible emissions observations shall be conducted in accordance with Method 9. If visible emissions occur from more than one point, the opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In that case, the Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272a(a).

(d) A furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of shop opacity are performed by a certified visible emission observer as follows: Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

(e) A bag leak detection system must be installed and continuously operated on all single-stack fabric filters if the owner or operator elects not to install and operate a continuous opacity monitoring system as provided for under paragraph (c) of this section. In addition, the owner or operator shall meet the visible emissions observation requirements in paragraph (c) of this section. The bag leak detection system must meet the specifications and requirements of paragraphs (e)(1) through (8) of this section.

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 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 particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (*e.g.*, using a strip chart recorder or a data logger.)

(3) The bag leak detection system must be equipped with an alarm system that will sound when an increase in relative particulate loading is detected over the alarm set point established according to paragraph (e)(4) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) For each bag leak detection system required by paragraph (e) of this section, the owner or operator shall develop and submit to the Administrator or delegated authority, for approval, a site-specific monitoring plan that addresses the items identified in paragraphs (i) through (v) of this paragraph (e)(4). For each bag leak detection system that operates based on the triboelectric effect, the monitoring

plan shall be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document ''Fabric Filter Bag Leak Detection Guidance'' (EPA–454/R–98–015). The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan shall describe the following:

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system including quality assurance procedures;

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list; and

(v) How the bag leak detection system output shall be recorded and stored.

(5) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(6) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided for in paragraphs (e)(6)(i) and (ii) of this section.

(i) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects including temperature and humidity according to the procedures identified in the site-specific monitoring plan required under paragraphs (e)(4) of this section.

(ii) If opacities greater than zero percent are observed over four consecutive 15-second observations during the daily opacity observations required under paragraph (c) of this section and the alarm on the bag leak detection system does not sound, the owner or operator shall lower the alarm set point on the bag leak detection system to a point where the alarm would have sounded during the period when the opacity observations were made.

(7) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detection sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(f) For each bag leak detection system installed according to paragraph (e) of this section, the owner or operator shall initiate procedures to determine the cause of all alarms within 1 hour of an alarm. Except as provided for under paragraph (g) of this section, the cause of the alarm must be alleviated within 3 hours of the time the alarm occurred by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to, the following:

(1) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate emissions;

(2) Sealing off defective bags or filter media;

(3) Replacing defective bags or filter media or otherwise repairing the control device;

(4) Sealing off a defective baghouse compartment;

(5) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; and

(6) Shutting down the process producing the particulate emissions.

(g) In approving the site-specific monitoring plan required in paragraph (e)(4) of this section, the Administrator or delegated authority may allow owners or operators more than 3 hours to alleviate specific conditions that cause an alarm if the owner or operator identifies the condition that could lead to an alarm in the monitoring plan, adequately explains why it is not feasible to alleviate the condition within 3 hours of the time the alarm occurred, and demonstrates that the requested additional time will ensure alleviation

of the condition as expeditiously as practicable.

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6672, Feb. 14, 1989; 64 FR 10111, Mar. 2, 1999; 70 FR 8532, Feb. 22, 2005]

§ 60.274a Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall maintain records of the following information:

(1) All data obtained under paragraph (b) of this section; and

(2) All monthly operational status inspections performed under paragraph (c) of this section.

(b) Except as provided under paragraph (e) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis the furnace static pressure (if DEC system is in use, and a furnace static pressure gauge is installed according to paragraph (f) of this section) and either: check and record the control system fan motor amperes and damper position on a once-per-shift basis; install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check and record damper positions on a once-per-shift basis. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of appendix A of this part.

(c) When the owner or operator of an affected facility is required to demonstrate compliance with the standards under § 60.272a(a)(3) and at any other time that the Administrator may require (under section 114 of the CAA, as amended) either: the control system fan motor amperes and all damper positions, the volumetric flow rate through each separately ducted hood, or the volumetric flow rate at the control device inlet and all damper positions shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to paragraph (b) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of § 60.276a(c).

(d) Except as provided under paragraph (e) of this section, the owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (*i.e.*, pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

(e) The owner or operator may petition the Administrator to approve any alternative to either the monitoring requirements specified in paragraph (b) of this section or the monthly operational status inspections specified in paragraph (d) of this section if the alternative will provide a continuous record of operation of each emission capture system.

(f) Except as provided for under § 60.273a(d), if emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The pressure shall be recorded as 15-minute integrated averages. The monitoring

device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) Except as provided for under §60.273a(d), when the owner or operator of an EAF controlled by a DEC is required to demonstrate compliance with the standard under §60.272a(a)(3), and at any other time the Administrator may require (under section 114 of the Clean Air Act, as amended), the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device required under paragraph (f) of this section. The owner or operator may petition the Administrator for reestablishment of the pressure whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility.

(h) During any performance test required under §60.8, and for any report thereof required by §60.276a(f) of this subpart, or to determine compliance with §60.272a(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF when direct-shell evacuation control systems are used;

(3) Control device operation log; and

(4) Continuous opacity monitor or Method 9 data.

[49 FR 43845, Oct. 31, 1984, as amended at 64 FR 10111, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000; 70 FR 8533, Feb. 22, 2005]

§60.275a Test methods and procedures.

(a) During performance tests required in §60.8, the owner or operator shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also §60.276a(e)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emission from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall demonstrate compliance with §60.272(a)(3) based on emissions from only the affected facility(ies).

(d) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in §60.272a as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.50

dscm (160 dscf) and, when a single EAF or AOD vessel is sampled, the sampling time shall include an integral number of heats.

(2) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$c_{st} = \left[\sum_{i=1}^{n}\left(c_{si}\,Q_{sdi}\right)\right]\sum_{i=1}^{n}Q_{sdi}$$

where:

c_{st}=average concentration of particulate matter, mg/dscm (gr/dscf).

c_{si}=concentration of particulate matter from control device ''i'', mg/dscm (gr/dscf).

n=total number of control devices tested.

Q_{sdi}=volumetric flow rate of stack gas from control device ''i'', dscm/hr (dscf/hr).

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(4) To demonstrate compliance with § 60.272a(a) (1), (2), and (3), the Method 9 test runs shall be conducted concurrently with the particulate matter test runs, unless inclement weather interferes.

(f) To comply with § 60.274a (c), (f), (g), and (h), the owner or operator shall obtain the information required in these paragraphs during the particulate matter runs.

(g) Any control device subject to the provisions of the subpart shall be designed and constructed to allow measurement of emissions using applicable test methods and procedures.

(h) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(1) Base compliance on control of the combined emissions;

(2) Utilize a method acceptable to the Administrator that compensates for the emissions from the facilities not subject to the provisions of this subpart, or;

(3) Any combination of the criteria of paragraphs (h)(1) and (h)(2) of this section.

(i) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, determinations of compliance with § 60.272a(a)(3) will only be based upon emissions originating from the affected facility(ies).

(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under § 60.8 to demonstrate compliance with § 60.272a(a) (1), (2), and (3) of this subpart.

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6673, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 65 FR 61758, Oct. 17, 2000]

§ 60.276a Recordkeeping and reporting requirements.

(a) Records of the measurements required in § 60.274a must be retained for at least 2 years following the date of the measurement.

(b) Each owner or operator shall submit a written report of exceedances of the control device opacity to the Administrator semi-annually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.

(c) Operation at a furnace static pressure that exceeds the value established under § 60.274a(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under § 60.274a(c) or operation at flow rates lower than those established under § 60.274a(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually.

(d) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

(e) When the owner or operator of an EAF or AOD is required to demonstrate compliance with the standard under § 60.275 (b)(2) or a combination of (b)(1) and (b)(2) the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked at least 30 days prior to the performance test.

(f) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with § 60.272a(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274a(h) of this subpart;

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous opacity monitor or Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods;

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description of analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

(g) The owner or operator shall maintain records of all shop opacity observations made in accordance with § 60.273a(d). All shop opacity observations in excess of the emission limit specified in § 60.272a(a)(3) of this subpart shall indicate a period of excess emission, and shall be reported to the administrator semi-annually, according to § 60.7(c).

(h) The owner or operator shall maintain the following records for each bag leak detection system required under § 60.273a(e):

(1) Records of the bag leak detection system output;

(2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(3) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, if procedures were initiated within 1 hour of the alarm, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and if the alarm was alleviated within 3 hours of the alarm.

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6673, Feb. 14, 1989; 64 FR 10111, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000; 70 FR 8533, Feb. 22, 2005]

Subpart BB—Standards of Performance for Kraft Pulp Mills

§ 60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any

portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in § 60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

[51 FR 18544, May 20, 1986]

§ 60.281 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A.

(a) *Kraft pulp mill* means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered part of the kraft pulp mill.

(b) *Neutral sulfite semichemical pulping operation* means any operation in which pulp is produced from wood by cooking (digesting) wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

(c) *Total reduced sulfur (TRS)* means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide, that are released during the kraft pulping operation and measured by Method 16.

(d) *Digester system* means each continuous digester or each batch digester used for the cooking of wood in white liquor, and associated flash tank(s), blow tank(s), chip steamer(s), and condenser(s).

(e) *Brown stock washer system* means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digester system. Diffusion washers are excluded from this definition.

(f) *Multiple-effect evaporator system* means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

(g) *Black liquor oxidation system* means the vessels used to oxidize, with air or oxygen, the black liquor, and associated storage tank(s).

(h) *Recovery furnace* means either a straight kraft recovery furnace or a cross recovery furnace, and includes the direct-contact evaporator for a direct-contact furnace.

(i) *Straight kraft recovery furnace* means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains 7 weight percent or less of the total pulp solids from the neutral sulfite semichemical process or has green liquor sulfidity of 28 percent or less.

(j) *Cross recovery furnace* means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains more than 7 weight percent of the total pulp solids from the neutral sulfite semichemical process and has a green liquor sulfidity of more than 28 percent.

(k) *Black liquor solids* means the dry weight of the solids which enter the recovery furnace in the black liquor.

(l) *Green liquor sulfidity* means the sulfidity of the liquor which leaves the smelt dissolving tank.

(m) *Smelt dissolving tank* means a vessel used for dissolving the smelt collected from the recovery furnace.

(n) *Lime kiln* means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

(o) *Condensate stripper system* means a column, and associated condensers, used to strip, with air or steam, TRS compounds from condensate streams from various processes within a kraft pulp mill.

[43 FR 7572, Feb. 23, 1978, as amended at 51 FR 18544, May 20, 1986; 65 FR 61758, Oct. 17, 2000]

§ 60.282 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any recovery furnace any gases which:

(i) Contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen.

(ii) Exhibit 35 percent opacity or greater.

(2) From any smelt dissolving tank any gases which contain particulate matter in excess of 0.1 g/kg black liquor solids (dry weight)[0.2 lb/ton black liquor solids (dry weight)].

(3) From any lime kiln any gases which contain particulate matter in excess of:

(i) 0.15 g/dscm (0.066 gr/dscf) corrected to 10 percent oxygen, when gaseous fossil fuel is burned.

(ii) 0.30 g/dscm (0.13 gr/dscf) corrected to 10 percent oxygen, when liquid fossil fuel is burned.

[43 FR 7572, Feb. 23, 1978, as amended at 65 FR 61758, Oct. 17, 2000]

§ 60.283 Standard for total reduced sulfur (TRS).

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 10 percent oxygen, unless the following conditions are met:

(i) The gases are combusted in a lime kiln subject to the provisions of paragraph (a)(5) of this section; or

(ii) The gases are combusted in a recovery furnace subject to the provisions of paragraphs (a)(2) or (a)(3) of this section; or

(iii) The gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace not subject to the provisions of this subpart, and are subjected to a minimum temperature of 650 °C (1200 °F) for at least 0.5 second; or

(iv) It has been demonstrated to the Administrator's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed brown stock washer system is technologically or economically unfeasible. Any exempt system will become subject to the provisions of this subpart if the facility is changed so that the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, or condensate stripper system are controlled by a means other than combustion. In this case, this system shall not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume on a dry basis, uncorrected for oxygen content.

(vi) The uncontrolled exhaust gases from a new, modified, or reconstructed digester system contain TRS less than 0.005 g/kg air dried pulp (ADP) (0.01 lb/ton ADP).

(2) From any straight kraft recovery furnace any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(3) From any cross recovery furnace any gases which contain TRS in excess of 25 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(4) From any smelt dissolving tank any gases which contain TRS in excess of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S).

(5) From any lime kiln any gases which contain TRS in excess of 8 ppm by volume on a dry basis, corrected to 10 percent oxygen.

[43 FR 7572, Feb. 23, 1978, as amended at 50 FR 6317, Feb. 14, 1985; 51 FR 18544, May 20, 1986; 65 FR 61758, Oct. 17, 2000]

§ 60.284 Monitoring of emissions and operations.

(a) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring systems:

(1) A continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from any recovery furnace. The span of this system shall be set at 70 percent opacity.

(2) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown

stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of § 60.283(a)(1) (iii) or (iv) apply. These systems shall be located downstream of the control device(s) and the spans of these continuous monitoring system(s) shall be set:

(i) At a TRS concentration of 30 ppm for the TRS continuous monitoring system, except that for any cross recovery furnace the span shall be set at 50 ppm.

(ii) At 25 percent oxygen for the continuous oxygen monitoring system.

(b) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(1) For any incinerator, a monitoring device which measures and records the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of § 60.283(a)(1)(iii) apply. The monitoring device is to be certified by the manufacturer to be accurate within ±1 percent of the temperature being measured.

(2) For any lime kiln or smelt dissolving tank using a scrubber emission control device:

(i) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate to within a gage pressure of ±500 pascals (ca. ±2 inches water gage pressure).

(ii) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±15 percent of design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The Administrator may be consulted for approval of alternative locations.

(c) Any owner or operator subject to the provisions of this subpart shall, except where the provisions of § 60.283(a)(1)(iii) or (iv) apply, perform the following:

(1) Calculate and record on a daily basis 12-hour average TRS concentrations for the two consecutive periods of each operating day. Each 12-hour average shall be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average total reduced sulfur concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(2) Calculate and record on a daily basis 12-hour average oxygen concentrations for the two consecutive periods of each operating day for the recovery furnace and lime kiln. These 12-hour averages shall correspond to the 12-hour average TRS concentrations under paragraph (c)(1) of this section and shall be determined as an arithmetic mean of the appropriate 12 contiguous 1-hour average oxygen concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(3) Using the following equation, correct all 12-hour average TRS concentrations to 10 volume percent oxygen, except that all 12-hour average TRS concentrations from a recovery furnace shall be corrected to 8 volume percent oxygen instead of 10 percent, and all 12-hour average TRS concentrations from a facility to which the provisions of § 60.283(a)(1)(v) apply shall not be corrected for oxygen content:

$$C_{corr}=C_{meas}\times(21-X/21-Y)$$

where:

C_{corr}=the concentration corrected for oxygen.

C_{meas}=the concentration uncorrected for oxygen.

X=the volumetric oxygen concentration in percentage to be corrected to (8 percent for recovery furnaces and 10 percent for lime kilns, incinerators, or other devices).

Y=the measured 12-hour average volumetric oxygen concentration.

(4) Record once per shift measurements obtained from the continuous monitoring devices installed under paragraph (b)(2) of this section.

(d) For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart shall report semiannually periods of excess emissions as follows:

(1) For emissions from any recovery furnace periods of excess emissions are:

(i) All 12-hour averages of TRS concentrations above 5 ppm by volume for straight kraft recovery furnaces and above 25 ppm by volume for cross recovery furnaces.

(ii) All 6-minute average opacities that exceed 35 percent.

(2) For emissions from any lime kiln, periods of excess emissions are all 12-hour average TRS concentration above 8 ppm by volume.

(3) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system periods of excess emissions are:

(i) All 12-hour average TRS concentrations above 5 ppm by volume unless the provisions of § 60.283(a)(1) (i), (ii), or (iv) apply; or

(ii) All periods in excess of 5 minutes and their duration during which the combustion temperature at the point of incineration is less than 650 °C (1200 °F), where the provisions of § 60.283(a)(1)(iii) apply.

(e) The Administrator will not consider periods of excess emissions reported under paragraph (d) of this section to be indicative of a violation of § 60.11(d) provided that:

(1) The percent of the total number of possible contiguous periods of excess emissions in a quarter (excluding periods of startup, shutdown, or malfunction and periods when the facility is not operating) during which excess emissions occur does not exceed:

(i) One percent for TRS emissions from recovery furnaces.

(ii) Six percent for average opacities from recovery furnaces.

(2) The Administrator determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.

(f) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems required under this section. All continuous monitoring systems shall be operated in accordance with the applicable procedures under Performance Specifications 1, 3, and 5 of appendix B of this part.

[43 FR 7572, Feb. 23, 1978, as amended at 51 FR 18545, May 20, 1986; 65 FR 61759, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.285 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.282(a) (1) and (3) as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure. The particulate concentration shall be corrected to the appropriate oxygen concentration according to § 60.284(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The gas sample shall be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the particular matter standard in § 60.282(a)(2) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = c_s Q_{sd} / BLS$$

where:

E=emission rate of particulate matter, g/kg (lb/ton) of BLS.

c_s = Concentration of particulate matter, g/dscm (lb/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

BLS=black liquor solids (dry weight) feed rate, kg/hr (ton/hr).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used instead of acetone in the sample recovery.

(3) Process data shall be used to determine the black liquor solids (BLS) feed rate on a dry weight basis.

(d) The owner or operator shall determine compliance with the TRS standards in § 60.283, except § 60.283(a)(1)(vi) and (4), as follows:

(1) Method 16 shall be used to determine the TRS concentration. The TRS concentration shall be corrected to the appropriate oxygen concentration using the procedure in § 60.284(c)(3). The sampling time shall be at least 3 hours, but no longer than 6 hours.

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The sample shall be taken over the same time period as the TRS samples.

(3) When determining whether a furnace is a straight kraft recovery furnace or a cross recovery furnace, TAPPI Method T.624 (incorporated by reference—see § 60.17) shall be used to determine sodium sulfide, sodium hydroxide, and sodium carbonate. These determinations shall be made 3 times daily from the green liquor, and the daily average values shall be converted to sodium oxide (Na_20) and substituted into the following equation to determine the green liquor sulfidity:

$$GLS = 100\ C_{Na_2S} / \left(C_{Na_2S} C_{NaOH} C_{Na_2CO_3} \right)$$

Where:

GLS=green liquor sulfidity, percent.

C_{Na2S}=concentration of Na_2S as Na_2O, mg/liter (gr/gal).

C_{NaOH}=concentration of NaOH as Na_2O, mg/liter (gr/gal).

C_{Na2CO3}=concentration of Na_2CO_3 as Na_2O, mg/liter (gr/gal).

(e) The owner or operator shall determine compliance with the TRS standards in § 60.283(a)(1)(vi) and (4) as follows:

(1) The emission rate (E) of TRS shall be computed for each run using the following equation:

$$E = C_{TRS}\ F\ Q_{sd}/P$$

where:

E=emission rate of TRS, g/kg (lb/ton) of BLS or ADP.

C_{TRS}=average combined concentration of TRS, ppm.

F = conversion factor, 0.001417 g H_2S/m^3-ppm (8.846×10^{-8} lb H_2S/ft^3-ppm).

Q_{sd}=volumetric flow rate of stack gas, dscm/hr (dscf/hr).

P=black liquor solids feed or pulp production rate, kg/hr (ton/hr).

(2) Method 16 shall be used to determine the TRS concentration (C_{TRS}).

(3) Method 2 shall be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas.

(4) Process data shall be used to determine the black liquor feed rate or the pulp production rate (P).

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 204 °C (400 °F).

(2) In place of Method 16, Method 16A or 16B may be used.

[54 FR 6673, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61759, Oct. 17, 2000]

Subpart CC—Standards of Performance for Glass Manufacturing Plants

§ 60.290 Applicability and designation of affected facility.

(a) Each glass melting furnace is an affected facility to which the provisions of this subpart apply.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 15, 1979, is subject to the requirements of this subpart.

(c) This subpart does not apply to hand glass melting furnaces, glass melting furnaces designed to produce less than 4.55 Mg (5 tons) of glass per day and all-electric melters.

[45 FR 66751, Oct. 7, 1980, as amended at 65 FR 61759, Oct. 17, 2000]

§ 60.291 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part, unless otherwise required by the context.

All-electric melter means a glass melting furnace in which all the heat required for melting is provided by electric current from electrodes submerged in the molten glass, although some fossil fuel may be charged to the furnace as raw material only.

Borosilicate recipe means glass product composition of the following approximate ranges of weight proportions: 60 to 80 percent silicon dioxide, 4 to 10 percent total R_2O (e.g., Na_2O and K_2O), 5 to 35 percent boric oxides, and 0 to 13 percent other oxides.

Container glass means glass made of soda-lime recipe, clear or colored, which is pressed and/or blown into bottles, jars, ampoules, and other products listed in Standard Industrial Classification 3221 (SIC 3221).

Experimental furnace means a glass melting furnace with the sole purpose of operating to evaluate glass melting processes, technologies, or glass products. An experimental furnace does not produce glass that is sold (except for further research and development purposes) or that is used as a raw material for nonexperimental furnaces.

Flat glass means glass made of soda-lime recipe and produced into continuous flat sheets and other products listed in SIC 3211.

Flow channels means appendages used for conditioning and distributing molten glass to forming apparatuses and are a permanently separate source of emissions such that no mixing of emissions occurs with emissions from the melter cooling system prior to their being vented to the atmosphere.

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 and flow channels in wool fiberglass and textile fiberglass manufacturing, are not considered part of the glass melting furnace.

Glass produced means the weight of the glass pulled from the glass melting furnace.

Hand glass melting furnace means a glass melting furnace where the molten glass is removed from the furnace by a glassworker using a blowpipe or a pontil.

Lead recipe means glass product composition of the following ranges of weight proportions: 50 to 60 percent silicon dioxide, 18 to 35 percent lead oxides, 5 to 20 percent total R_2O (e.g., Na_2O and K_2O), 0 to 8 percent total R_2O_3 (e.g., Al_2O_3), 0 to 15 percent total RO (e.g., CaO, MgO), other than lead oxide, and 5 to 10 percent other oxides.

Pressed and blown glass means glass which is pressed, blown, or both, including textile fiberglass, noncontinuous flat glass, noncontainer glass, and other products listed in SIC 3229. It is separated into:

(1) Glass of borosilicate recipe.

(2) Glass of soda-lime and lead recipes.

(3) Glass of opal, fluoride, and other recipes.

Rebricking means cold replacement of damaged or worn refractory parts of the glass melting furnace. Rebricking includes replacement of the refractories comprising the bottom, sidewalls, or roof of the melting vessel; replacement of refractory work in the heat exchanger; replacement of refractory portions of the glass conditioning and distribution system.

Soda-lime recipe means glass product composition of the following ranges of weight proportions: 60 to 75 percent silicon dioxide, 10 to 17 percent total R_2O (e.g., Na_2O and K_2O), 8 to 20 percent total RO but not to include any PbO (e.g., CaO, and MgO), 0 to 8 percent total R_2O_3 (e.g., Al_2O_3), and 1 to 5 percent other oxides.

Textile fiberglass means fibrous glass in the form of continuous strands having uniform thickness.

With modified-processes means using any technique designed to minimize emissions without the use of add-on pollution controls.

Wool fiberglass means fibrous glass of random texture, including fiberglass insulation, and other products listed in SIC 3296.

[45 FR 66751, Oct. 7, 1980, as amended at 49 FR 41035, Oct. 19, 1984; 65 FR 61759, Oct. 17, 2000]

§ 60.292 Standards for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of a glass melting furnace subject to the provisions of this subpart shall cause to be discharged into the atmosphere—

(1) From any glass melting furnace fired exclusively with either a gaseous fuel or a liquid fuel, particulate matter at emission rates exceeding those specified in table CC–1, Column 2 and Column 3, respectively, or

(2) From any glass melting furnace, fired simultaneously with gaseous and liquid fuels, particulate matter at emission rates exceeding STD as specified by the following equation:

$$STD=X\ [1.3(Y)+(Z)]$$

Where:

STD=Particulate matter emission limit, g of particulate/kg (lb of particulate/ton) of glass produced.

X=Emission rate specified in table CC–1 for furnaces fired with gaseous fuel (Column 2).

Y=Decimal fraction of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces as determined in § 60.296(b). (joules/joules).

Z=(1–Y).

(b) Conversion of a glass melting furnace to the use of liquid fuel is not considered a modification for the purposes of § 60.14.

(c) Rebricking and the cost of rebricking is not considered a reconstruction for the purposes of § 60.15.

(d) An owner or operator of an experimental furnace is not subject to the requirements of this section.

(e) During routine maintenance of add-on pollution controls, an owner or operator of a glass melting furnace subject to the provisions of paragraph (a) of this section is exempt from the provisions of paragraph (a) of this section if:

(1) Routine maintenance in each calendar year does not exceed 6 days;

(2) Routine maintenance is conducted in a manner consistent with good air pollution control practices for minimizing emissions; and

(3) A report is submitted to the Administrator 10 days before the start of the routine maintenance (if 10 days cannot be provided, the report must be submitted as soon as practicable) and the report contains an explanation of the schedule of the maintenance.

TABLE CC–1—*Emission Rates*

[g of particulate/kg of glass produced]

Col. 1—Glass manufacturing plant industry segment	Col. 2—Furnace fired with gaseous fuel	Col. 3—Furnace fired with liquid fuel
Container glass	0.1	0.13
Pressed and blown glass		
(a) Borosilicate Recipes	0.5	0.65
(b) Soda-Lime and Lead Recipes	0.1	0.13
(c) Other-Than Borosilicate, Soda-Lime, and Lead Recipes (including opal, fluoride, and other recipes)	0.25	0.325
Wool fiberglass	0.25	0.325
Flat glass	0.225	0.225

[45 FR 66751, Oct. 7, 1980, as amended at 49 FR 41035, Oct. 19, 1984; 54 FR 6674, Feb. 14, 1989; 65 FR 61759, Oct. 17, 2000]

§ 60.293 Standards for particulate matter from glass melting furnace with modified-processes.

(a) An owner or operator of a glass melting furnaces with modified-processes is not subject to the provisions of § 60.292 if the affected facility complies with the provisions of this section.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of a glass melting furnace with modified-processes subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the affected facility:

(1) Particulate matter at emission rates exceeding 0.5 gram of particulate per kilogram of glass produced (g/kg) as measured according to paragraph (e) of this section for container glass, flat

glass, and pressed and blown glass with a soda-lime recipe melting furnaces.

(2) Particulate matter at emission rates exceeding 1.0 g/kg as measured according to paragraph (e) of this section for pressed and blown glass with a borosilicate recipe melting furnace.

(3) Particulate matter at emission rates exceeding 0.5 g/kg as measured according to paragraph (e) of this section for textile fiberglass and wool fiberglass melting furnaces.

(c) The owner or operator of an affected facility that is subject to emission limits specified under paragraph (b) of this section 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 affected facility.

(2) During the performance test required to be conducted by § 60.8, conduct continuous opacity monitoring during each test run.

(3) Calculate 6-minute opacity averages from 24 or more data points equally spaced over each 6-minute period during the test runs.

(4) Determine, based on the 6-minute opacity averages, the opacity value corresponding to the 99 percent upper confidence level of a normal distribution of average opacity values.

(5) For the purposes of § 60.7, report to the Administrator as excess emissions all of the 6-minute periods during which the average opacity, as measured by the continuous monitoring system installed under paragraph (c)(1) of this section, exceeds the opacity value corresponding to the 99 percent upper confidence level determined under paragraph (c)(4) of this section.

(d)(1) After receipt and consideration of written application, the Administrator may approve alternative continuous 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 an emission limit specified in paragraph (b) of this section.

(2) After the Administrator approves an alternative continuous monitoring system for an affected facility, the requirements of paragraphs (c) (1) through (5) of this section will not apply for that affected facility.

(e) An owner or operator may redetermine the opacity value corresponding to the 99 percent upper confidence level as described in paragraph (c)(4) of this section if the owner or operator:

(1) Conducts continuous opacity monitoring during each test run of a performance test that demonstrates compliance with an emission limit of paragraph (b) of this section,

(2) Recalculates the 6-minute opacity averages as described in paragraph (c)(3) of this section, and

(3) Uses the redetermined opacity value corresponding to the 99 percent upper confidence level for the purposes of paragraph (c)(5) of this section.

(f) Test methods and procedures as specified in § 60.296 shall be used to determine compliance with this section except that to determine compliance for any glass melting furnace using modified processes and fired with either a gaseous fuel or a liquid fuel containing less than 0.50 weight percent sulfur, Method 5 shall be used with the probe and filter holder heating system in the sampling train set to provide a gas temperature of 120 ±14 °C (248 ±25 °F).

[49 FR 41036, Oct. 19, 1984, as amended at 64 FR 7466, Feb. 12, 1999; 65 FR 61759, Oct. 17, 2000]

§§ 60.294–60.295 [Reserved]

§ 60.296 Test methods and procedures.

(a) If a glass melting furnace with modified processes is changed to one without modified processes or if a glass melting furnace without modified processes is changed to one with modified processes, the owner or operator shall notify the Administrator at least 60 days before the change is scheduled to occur.

(b) When gaseous and liquid fuels are fired simultaneously in a glass melting furnace, the owner or operator shall determine the applicable standard under § 60.292(a)(2) as follows:

(1) The ratio (Y) of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces shall be computed for each run using the following equation:

$Y=(H_l L)/(H_l L+H_g G)$

where:

Y=decimal fraction of liquid fuel heating value to total fuel heating value.
H_l=gross calorific value of liquid fuel, J/kg.
H_g=gross calorific value of gaseous fuel, J/kg.
L=liquid flow rate, kg/hr.
G=gaseous flow rate, kg/hr.

(2) Suitable methods shall be used to determine the rates (L and G) of fuels burned during each test period and a material balance over the glass melting furnace shall be used to confirm the rates.

(3) ASTM Method D240–76 or 92 (liquid fuels) and D1826–77 or 94 (gaseous fuels) (incorporated by reference—see § 60.17), as applicable, shall be used to determine the gross calorific values.

(c) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(d) The owner or operator shall determine compliance with the particulate matter standards in §§ 60.292 and 60.293 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_s Q_{sd} - A)/P$

where:

E=emission rate of particulate matter, g/kg.
c_s=concentration of particulate matter, g/dsm.
Q_{sd}=volumetric flow rate, dscm/hr.
A=zero production rate correction
=227 g/hr for container glass, pressed and blown (soda-lime and lead) glass, and pressed and blown (other than borosilicate, soda-lime, and lead) glass.
=454 g/hr for pressed and blown (borosilicate) glass, wool fiberglass, and flat glass.
P=glass production rate, kg/hr.

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177 ±14 °C (350 ±25 °F), except under the conditions specified in § 60.293(e).

(3) Direct measurement or material balance using good engineering practice shall be used to determine the amount of glass pulled during the performance test. The rate of glass produced is defined as the weight of glass pulled from the affected facility during the performance test divided by the number of hours taken to perform the performance test.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6674, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 65 FR 61759, Oct. 17, 2000]

Subpart DD—Standards of Performance for Grain Elevators

SOURCE: 43 FR 34347, Aug. 3, 1978, unless otherwise noted.

§ 60.300 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility at any grain terminal elevator or any grain storage elevator, except as provided under § 60.304(b). The affected facilities are each truck unloading station, truck loading station, barge and ship unloading station, barge and ship loading station, railcar loading station, railcar unloading station, grain dryer, and all grain handling operations.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after August 3, 1978, is subject to the requirements of this part.

[43 FR 34347, Aug. 3, 1978, as amended at 52 FR 42434, Nov. 5, 1988]

§ 60.301 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Grain* means corn, wheat, sorghum, rice, rye, oats, barley, and soybeans.

(b) *Grain elevator* means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded.

(c) *Grain terminal elevator* means any grain elevator which has a permanent storage capacity of more than 88,100 m^3

(ca. 2.5 million U.S. bushels), except those located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots.

(d) *Permanent storage capacity* means grain storage capacity which is inside a building, bin, or silo.

(e) *Railcar* means railroad hopper car or boxcar.

(f) *Grain storage elevator* means any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 35,200 m^3 (ca. 1 million bushels).

(g) *Process emission* means the particulate matter which is collected by a capture system.

(h) *Fugitive emission* means the particulate matter which is not collected by a capture system and is released directly into the atmosphere from an affected facility at a grain elevator.

(i) *Capture system* means the equipment such as sheds, hoods, ducts, fans, dampers, etc. used to collect particulate matter generated by an affected facility at a grain elevator.

(j) *Grain unloading station* means that portion of a grain elevator where the grain is transferred from a truck, railcar, barge, or ship to a receiving hopper.

(k) *Grain loading station* means that portion of a grain elevator where the grain is transferred from the elevator to a truck, railcar, barge, or ship.

(l) *Grain handling operations* include bucket elevators or legs (excluding legs used to unload barges or ships), scale hoppers and surge bins (garners), turn heads, scalpers, cleaners, trippers, and the headhouse and other such structures.

(m) *Column dryer* means any equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in one or more continuous packed columns between two perforated metal sheets.

(n) *Rack dryer* means any equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in a cascading flow around rows of baffles (racks).

(o) *Unloading leg* means a device which includes a bucket-type elevator which is used to remove grain from a barge or ship.

[43 FR 34347, Aug. 3, 1978, as amended at 65 FR 61759, Oct. 17, 2000]

§ 60.302 Standard for particulate matter.

(a) On and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere any gases which exhibit greater than 0 percent opacity from any:

(1) Column dryer with column plate perforation exceeding 2.4 mm diameter (ca. 0.094 inch).

(2) Rack dryer in which exhaust gases pass through a screen filter coarser than 50 mesh.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility except a grain dryer any process emission which:

(1) Contains particulate matter in excess of 0.023 g/dscm (ca. 0.01 gr/dscf).

(2) Exhibits greater than 0 percent opacity.

(c) On and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere any fugitive emission from:

(1) Any individual truck unloading station, railcar unloading station, or railcar loading station, which exhibits greater than 5 percent opacity.

(2) Any grain handling operation which exhibits greater than 0 percent opacity.

(3) Any truck loading station which exhibits greater than 10 percent opacity.

(4) Any barge or ship loading station which exhibits greater than 20 percent opacity.

(d) The owner or operator of any barge or ship unloading station shall operate as follows:

(1) The unloading leg shall be enclosed from the top (including the receiving hopper) to the center line of the bottom pulley and ventilation to a control device shall be maintained on both sides of the leg and the grain receiving hopper.

(2) The total rate of air ventilated shall be at least 32.1 actual cubic meters per cubic meter of grain handling capacity (ca. 40 ft^3/bu).

(3) Rather than meet the requirements of paragraphs (d)(1) and (2) of this section the owner or operator may use other methods of emission control if it is demonstrated to the Administrator's satisfaction that they would reduce emissions of particulate matter to the same level or less.

§ 60.303 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.302 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration and the volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.70 dscm (60 dscf). The probe and filter holder shall be operated without heaters.

(2) Method 2 shall be used to determine the ventilation volumetric flow rate.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used.

[54 FR 6674, Feb. 14, 1989]

§ 60.304 Modifications.

(a) The factor 6.5 shall be used in place of ''annual asset guidelines repair allowance percentage,'' to determine whether a capital expenditure as defined by § 60.2 has been made to an existing facility.

(b) The following physical changes or changes in the method of operation shall not by themselves be considered a modification of any existing facility:

(1) The addition of gravity loadout spouts to existing grain storage or grain transfer bins.

(2) The installation of automatic grain weighing scales.

(3) Replacement of motor and drive units driving existing grain handling equipment.

(4) The installation of permanent storage capacity with no increase in hourly grain handling capacity.

Subpart EE—Standards of Performance for Surface Coating of Metal Furniture

SOURCE: 47 FR 49287, Oct. 29, 1982, unless otherwise noted.

§ 60.310 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each metal furniture surface coating operation in which organic coatings are applied.

(b) This subpart applies to each affected facility identified in paragraph (a) of this section on which construction, modification, or reconstruction is commenced after November 28, 1980.

(c) Any owner or operator of a metal furniture surface coating operation that uses less than 3,842 liters of coating (as applied) per year and keeps purchase or inventory records or other data necessary to substantiate annual coating usage shall be exempt from all other provisions of this subpart. These records shall be maintained at the source for a period of at least 2 years.

[47 FR 49287, Oct. 29, 1982, as amended at 50 FR 18248, Apr. 30, 1985]

§ 60.311 Definitions and symbols.

(a) All terms used in this subpart not defined below are given the meaning in the Act and in subpart A of this part.

Bake oven means a device which uses heat to dry or cure coatings.

Dip coating means a method of applying coatings in which the part is submerged in a tank filled with the coatings.

Electrodeposition (EDP) means a method of applying coatings in which the part is submerged in a tank filled with the coatings and in which an electrical potential is used to enhance deposition of the coatings on the part.

Electrostatic spray application means a spray application method that uses an electrical potential to increase the transfer efficiency of the coatings.

Flash-off area means the portion of a surface coating operation between the coating application area and bake oven.

Flow coating means a method of applying coatings in which the part is carried through a chamber containing numerous nozzles which direct unatomized streams of coatings from many different angles onto the surface of the part.

Organic coating means any coating used in a surface coating operation, including dilution solvents, from which volatile organic compound emissions occur during the application or the curing process. For the purpose of this regulation, powder coatings are not included in this definition.

Powder coating means any surface coating which is applied as a dry powder and is fused into a continuous coating film through the use of heat.

Spray application means a method of applying coatings by atomizing and directing the atomized spray toward the part to be coated.

Surface coating operation means the system on a metal furniture surface coating line used to apply and dry or cure an organic coating on the surface of the metal furniture part or product. The surface coating operation may be a prime coat or a top coat operation and includes the coating application station(s), flash-off area, and curing oven.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a part or product to the total amount of coating solids used.

VOC content means the proportion of a coating that is volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of coating solids.

VOC emissions means the mass of volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of applied coating solids, emitted from a metal furniture surface coating operation.

(b) All symbols used in this subpart not defined below are given the meaning in the Act and in subpart A of this part.

C_a=the VOC concentration in each gas stream leaving the control device and entering the atmosphere (parts per million by volume, as carbon)

C_b=the VOC concentration in each gas stream entering the control device (parts per million by volume, as carbon)

C_f=the VOC concentration in each gas stream emitted directly to the atmosphere (parts per million by volume, as carbon)

D_c=density of each coating, as received (kilograms per liter)

D_d=density of each diluent VOC-solvent (kilograms per liter)

D_r=density of VOC-solvent recovered by an emission control device (kilograms per liter)

E=VOC destruction efficiency of the control device (fraction)

F=the proportion of total VOC's emitted by an affected facility that enters the control device (fraction)

G=the volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of coating solids applied (kilograms per liter)

L_c=the volume of each coating consumed, as received (liters)

L_d=the volume of each diluent VOC-solvent added to coatings (liters)

L_r=the volume of VOC-solvent recovered by an emission control device (liters)

L_s=the volume of coating solids consumed (liters)

M_d=the mass of diluent VOC-solvent consumed (kilograms)

M_o=the mass of VOC's in coatings consumed, as received (kilograms)

M_r=the mass of VOC's recovered by an emission control device (kilograms)

N=the volume weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)

Q_a=the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere (dry standard cubic meters per hour)

Q_b=the volumetric flow rate of each gas stream entering the control device (dry standard cubic meters per hour)

Q_f=the volumetric flow rate of each gas stream emitted directly to the atmosphere (dry standard cubic meters per hour)

R=the overall VOC emission reduction achieved for an affected facility (fraction)

T=the transfer efficiency (fraction)

V_s=the proportion of solids in each coating (or input stream), as received (fraction by volume)

W_o=the proportion of VOC's in each coating (or input stream), as received (fraction by weight)

§ 60.312 Standard for volatile organic compounds (VOC).

(a) On and after the date on which the initial performance test required to be conducted by § 60.8(a) is completed, no owner or operator subject to the provisions of this subpart shall cause the discharge into the atmosphere of VOC emissions from any metal furniture surface coating operation in excess of 0.90 kilogram of VOC per liter of coating solids applied.

§ 60.313 Performance tests and compliance provisions.

(a) Section 60.8(d) and (f) do not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining monthly volume-weighted average emissions of VOC's in kilograms per liter of coating solids applied (G).

(1) An owner or operator shall use the following procedures for any affected facility which does not use a capture system and control device to comply with the emissions limit specified under § 60.312. The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or by an analysis of each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine the VOC content of coatings using Method 24. The owner or operator shall determine the volume of coating and the mass of VOC-solvent used for thinning purposes from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coating used at each facility by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Calculate the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied (G) during each calendar month for each affected facility, except as provided under § 60.313(c)(2) and (c)(3). Each monthly calculation is considered a performance test. Except as provided in paragraph (c)(1)(iv) of this section, the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied (G) each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC's used (M_o+M_d) during each calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

($\Sigma L_{dj} D_{dj}$ will be 0 if no VOC solvent is added to the coatings, as received.)

Where: n is the number of different coatings used during the calendar month and m is the number of different diluent VOC-solvents used during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in each calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

Where: n is the number of different coatings used during the calendar month.

Select the appropriate transfer efficiency from table 1. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be determined by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the accuracy of the transfer efficiency claims.

TABLE 1—TRANSFER EFFICIENCIES

Application methods	Transfer efficiency (T)
Air atomized spray	0.25
Airless spray	.25
Manual electrostatic spray	.60
Nonrotational automatic electrostatic spray	.70
Rotating head electrostatic spray (manual and automatic)	.80
Dip coat and flow coat	.90
Electrodeposition	.95

Where more than one application method is used within a single surface coating operation, the owner or operator shall determine the composition and volume of each coating applied by each method through a means acceptable to the Administrator and compute the weighted average transfer efficiency by the following equation:

$$T = \frac{\sum_{i=1}^{n} L_{cik} V_{sik} T_k}{\sum_{k=1}^{p} L_s}$$

Where n is the number of coatings used and p is the number of application methods used.

(C) Calculate the volume-weighted average mass of VOC's consumed per unit volume of coating solids applied (G) during the calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T}$$

(ii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during the calendar month for each affected facility by the following equation:

N=G

(iii) Where the volume-weighted average mass of VOC discharged to the atmosphere per unit volume of coating solids applied (N) is less than or equal to 0.90 kilogram per liter, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content, as received, which when divided by the lowest transfer efficiency at which the coating is applied, results in a value equal to or less than 0.90 kilogram per liter, the affected facility is in compliance provided no VOC's are added to the coatings during distribution or application.

(2) An owner or operator shall use the following procedures for any affected facility that uses a capture system and a control device that destroys VOC's (e.g., incinerator) to comply with the emission limit specified under § 60.312.

(i) Determine the overall reduction efficiency (R) for the capture system and control device. For the initial performance test the overall reduction efficiency (R) shall be determined as prescribed in paragraphs (c)(2)(i) (A), (B), and (C) of this section. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test providing control device and capture system operating conditions have not changed. The procedure in, paragraphs (c)(2)(i) (A), (B), and (C), of this section, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC's emitted by an affected facility that enters the control device using the following equation:

$$F = \frac{\sum_{i=1}^{n} C_{bi} Q_{bi}}{\sum_{i=1}^{n} C_{bi} Q_{bi} + \sum_{j=1}^{m} C_{fj} Q_{fj}}$$

Where

n is the number of gas streams entering the control device and

m is the number of gas streams emitted directly to the atmosphere.

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}$$

Where:

n is the number of gas streams entering the control device, and

m is the number of gas streams leaving the contol device and entering the atmosphere.

(C) Determine overall reduction efficiency (R) using the following equation:

R=EF

(ii) Calculate the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraphs (c)(1)(i) (A), (B), and (C) of this section.

(iii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month by the following equation:

N=G(1−R)

(iv) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.90 kilogram per liter of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

(3) An owner or operator shall use the following procedure for any affected facility which uses a control device that recovers the VOC's (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.312.

(i) Calculate the total mass of VOC's consumed (M_o+M_d) and the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraph (c)(1)(i) (A), (B), and (C) of this section.

(ii) Calculate the total mass of VOC's recovered (M_r) during each calendar month using the following equation:

M_r=L_r D_r

(iii) Calculate overall reduction efficiency of the control device (R) for each calendar month for each affected facility using the following equation:

$$R = \frac{M_r}{M_o + M_d}$$

(iv) Calculate the volume-weighted average mass of VOC's emitted to the atmosphere (N) for each calendar month for each affected facility using equation in paragraph (c)(2)(iii) of this section.

(v) If the weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.90 kilogram per liter of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

[47 FR 49287, Oct. 29, 1982, as amended at 65 FR 61759, Oct. 17, 2000]

§ 60.314 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility which uses a capture system and an incinerator to comply with the emission limits specified under § 60.312 shall install, calibrate, maintain, and operate temperature measurement devices according to the following procedures:

(1) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of 0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(3) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

(b) The owner or operator of an affected facility which uses a capture system and a solvent recovery system to comply with the emission limits specified under § 60.312 shall install the equipment necessary to determine the total volume of VOC-solvent recovered daily.

§ 60.315 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for a period of one calendar month from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.313(c)(1)(iv), a list of the coatings used during a period of one calendar month, the VOC content of each coating calculated from data determined using Method 24 or supplied by the manufacturer of the coating, and the minimum transfer efficiency of any coating application equipment used during the month.

(3) For each affected facility where compliance is achieved through the use of an incineration system, the following additional information will be reported:

(i) The proportion of total VOC's emitted that enters the control device (F),

(ii) The VOC reduction efficiency of the control device (E),

(iii) The average combustion temperature (or the average temperature upstream and downstream of the catalyst bed), and

(iv) A description of the method used to establish the amount of VOC's captured and sent to the incinerator.

(4) For each affected facility where compliance is achieved through the use of a solvent recovery system, the following additional information will be reported:

(i) The volume of VOC-solvent recovered (L_r), and

(ii) The overall VOC emission reduction achieved (R).

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under § 60.312. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit at the frequency specified in § 60.7(c) the following:

(1) Where compliance with § 60.312 is achieved through the use of thermal incineration, each 3-hour period when metal furniture is being coated during which the average temperature of the device was more than 28 °C below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under § 60.313.

(2) Where compliance with § 60.312 is achieved through the use of catalytic incineration, each 3-hour period when metal furniture is being coated during which the average temperature of the device immediately before the catalyst bed is more than 28 °C below the average temperature of the device immediately before the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under § 60.313. Additionally, when metal furniture is being coated, all 3-hour periods during which 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 at which destruction efficiency was determined as specified under § 60.313 will be recorded.

(3) For thermal and catalytic incinerators, if no such periods as described in paragraphs (c)(1) and (c)(2) of this section occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine VOC emissions from each affected facility. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain, at the source, daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the amount of solvent recovered by the system for each affected facility.

[47 FR 49287, Oct. 29, 1982, as amended at 55 FR 51383, Dec. 13, 1990; 65 FR 61759, Oct. 17, 2000]

§ 60.316 Test methods and procedures.

(a) The reference methods in appendix A to this part except as provided under § 60.8(b) shall be used to determine compliance with § 60.312 as follows:

(1) Method 24, or coating manufacturer's formulation data, for use in the determination of VOC content of each batch of coating as applied to the surface of the metal parts. In case of an inconsistency between the Method 24 results and the formulation data, the Method 24 results will govern.

(2) Method 25 for the measurement of VOC concentration.

(3) Method 1 for sample and velocity traverses.

(4) Method 2 for velocity and volumetric flow rate.

(5) Method 3 for gas analysis.

(6) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be at least a 1 liter sample in a 1 liter container taken at a point where the sample will be representative of the coating material as applied to the surface of the metal part.

(c) For Method 25, the minimum sampling time for each of 3 runs is 60 minutes and the minimum sample volume is 0.003 dry standard cubic meters except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(d) The Administrator will approve testing of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that testing of representative stacks yields results comparable to those that would be obtained by testing all stacks.

Subpart FF [Reserved]

Subpart GG—Standards of Performance for Stationary Gas Turbines

§ 60.330 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities: All stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after October 3, 1977, is subject to the requirements of this part except as provided in paragraphs (e) and (j) of § 60.332.

[44 FR 52798, Sept. 10, 1979, as amended at 52 FR 42434, Nov. 5, 1987; 65 FR 61759, Oct. 17, 2000]

§ 60.331 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Stationary gas turbine* means any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability.

(b) *Simple cycle gas turbine* means any stationary gas turbine which does not

recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

(c) *Regenerative cycle gas turbine* means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine.

(d) *Combined cycle gas turbine* means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water or generate steam.

(e) *Emergency gas turbine* means any stationary gas turbine which operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation.

(f) *Ice fog* means an atmospheric suspension of highly reflective ice crystals.

(g) *ISO standard day conditions* means 288 degrees Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

(h) *Efficiency* means the gas turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output based on the lower heating value of the fuel.

(i) *Peak load* means 100 percent of the manufacturer's design capacity of the gas turbine at ISO standard day conditions.

(j) *Base load* means the load level at which a gas turbine is normally operated.

(k) *Fire-fighting turbine* means any stationary gas turbine that is used solely to pump water for extinguishing fires.

(l) *Turbines employed in oil/gas production or oil/gas transportation* means any stationary gas turbine used to provide power to extract crude oil/natural gas from the earth or to move crude oil/natural gas, or products refined from these substances through pipelines.

(m) A *Metropolitan Statistical Area* or *MSA* as defined by the Department of Commerce.

(n) *Offshore platform gas turbines* means any stationary gas turbine located on a platform in an ocean.

(o) *Garrison facility* means any permanent military installation.

(p) *Gas turbine model* means a group of gas turbines having the same nominal air flow, combuster inlet pressure, combuster inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure.

(q) *Electric utility stationary gas turbine* means any stationary gas turbine constructed for the purpose of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale.

(r) *Emergency fuel* is a fuel fired by a gas turbine only during circumstances, such as natural gas supply curtailment or breakdown of delivery system, that make it impossible to fire natural gas in the gas turbine.

(s) *Unit operating hour* means a clock hour during which any fuel is combusted in the affected unit. If the unit combusts fuel for the entire clock hour, it is considered to be a full unit operating hour. If the unit combusts fuel for only part of the clock hour, it is considered to be a partial unit operating hour.

(t) *Excess emissions* means a specified averaging period over which either:

(1) The NO_X emissions are higher than the applicable emission limit in § 60.332;

(2) The total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in § 60.333; or

(3) The recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

(u) *Natural gas* means a naturally occurring fluid mixture of hydrocarbons (*e.g.*, methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Equivalents of this in other units are as follows: 0.068 weight percent total sulfur, 680 parts per million by weight (ppmw) total sulfur, and 338 parts per million by volume (ppmv) at 20 degrees Celsius total

sulfur. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

(v) *Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

(w) *Lean premix stationary combustion turbine* means any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture for combustion in the combustor. Mixing may occur before or in the combustion chamber. A unit which is capable of operating in both lean premix and diffusion flame modes is considered a lean premix stationary combustion turbine when it is in the lean premix mode, and it is considered a diffusion flame stationary combustion turbine when it is in the diffusion flame mode.

(x) *Diffusion flame stationary combustion turbine* means any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition. A unit which is capable of operating in both lean premix and diffusion flame modes is considered a lean premix stationary combustion turbine when it is in the lean premix mode, and it is considered a diffusion flame stationary combustion turbine when it is in the diffusion flame mode.

(y) *Unit operating day* means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

[44 FR 52798, Sept. 10, 1979, as amended at 47 FR 3770, Jan. 27, 1982; 65 FR 61759, Oct. 17, 2000; 69 FR 41359, July 8, 2004]

§ 60.332 Standard for nitrogen oxides.

(a) On and after the date on which the performance test required by § 60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraphs (b), (c), and (d) of this section shall comply with one of the following, except as provided in paragraphs (e), (f), (g), (h), (i), (j), (k), and (l) of this section.

(1) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0075\frac{(14.4)}{Y} + F$$

where:

STD = allowable ISO corrected (if required as given in § 60.335(b)(1)) NO_X emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and

F = NO_X emission allowance for fuel-bound nitrogen as defined in paragraph (a)(4) of this section.

(2) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0150\frac{(14.4)}{Y} + F$$

where:

STD = allowable ISO corrected (if required as given in § 60.335(b)(1)) NO_X emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

Y = manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and

F = NO_X emission allowance for fuel-bound nitrogen as defined in paragraph (a)(4) of this section.

(3) The use of F in paragraphs (a)(1) and (2) of this section is optional. That is, the owner or operator may choose to apply a NO_X allowance for fuel-bound nitrogen and determine the appropriate F-value in accordance with paragraph (a)(4) of this section or may accept an F-value of zero.

(4) If the owner or operator elects to apply a NO_X emission allowance for fuel-bound nitrogen, F shall be defined according to the nitrogen content of the fuel during the most recent performance test required under § 60.8 as follows:

Fuel-bound nitrogen (percent by weight)	F (NO_X percent by volume)
N ≤ .015	0
0.015 <N≤0.1	0.04 (N)
0.1<N≤0.25	0.004+0.0067(N–0.1)
N >0.25	0.005

Where:

N = the nitrogen content of the fuel (percent by weight).

or:

Manufacturers may develop and submit to EPA custom fuel-bound nitrogen allowances for each gas turbine model they manufacture. These fuel-bound nitrogen allowances shall be substantiated with data and must be approved for use by the Administrator before the initial performance test required by § 60.8. Notices of approval of custom fuel-bound nitrogen allowances will be published in the FEDERAL REGISTER.

(b) Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with the provisions of paragraph (a)(1) of this section.

(c) Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired, shall comply with the provisions of paragraph (a)(2) of this section.

(d) Stationary gas turbines with a manufacturer's rated base load at ISO conditions of 30 megawatts or less except as provided in § 60.332(b) shall comply with paragraph (a)(2) of this section.

(e) Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired and that have commenced construction prior to October 3, 1982 are exempt from paragraph (a) of this section.

(f) Stationary gas turbines using water or steam injection for control of NO_X emissions are exempt from paragraph (a) when ice fog is deemed a traffic hazard by the owner or operator of the gas turbine.

(g) Emergency gas turbines, military gas turbines for use in other than a garrison facility, military gas turbines installed for use as military training facilities, and fire fighting gas turbines are exempt from paragraph (a) of this section.

(h) Stationary gas turbines engaged by manufacturers in research and development of equipment for both gas turbine emission control techniques and gas turbine efficiency improvements are exempt from paragraph (a) on a case-by-case basis as determined by the Administrator.

(i) Exemptions from the requirements of paragraph (a) of this section will be granted on a case-by-case basis as determined by the Administrator in specific geographical areas where mandatory water restrictions are required by governmental agencies because of drought conditions. These exemptions will be allowed only while the mandatory water restrictions are in effect.

(j) Stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour that commenced construction, modification, or reconstruction between the dates of October 3, 1977, and January 27, 1982, and were required in the September 10, 1979, FEDERAL REGISTER (44 FR 52792) to comply with paragraph (a)(1) of this section, except electric utility stationary gas turbines, are exempt from paragraph (a) of this section.

(k) Stationary gas turbines with a heat input greater than or equal to 10.7 gigajoules per hour (10 million Btu/hour) when fired with natural gas are

exempt from paragraph (a)(2) of this section when being fired with an emergency fuel.

(l) Regenerative cycle gas turbines with a heat input less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) are exempt from paragraph (a) of this section.

[44 FR 52798, Sept. 10, 1979, as amended at 47 FR 3770, Jan. 27, 1982; 65 FR 61759, Oct. 17, 2000; 69 FR 41359, July 8, 2004]

§ 60.333 Standard for sulfur dioxide.

On and after the date on which the performance test required to be conducted by § 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with one or the other of the following conditions:

(a) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis.

(b) No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw).

[44 FR 52798, Sept. 10, 1979, as amended at 69 FR 41360, July 8, 2004]

§ 60.334 Monitoring of operations.

(a) Except as provided in paragraph (b) of this section, the owner or operator of any stationary gas turbine subject to the provisions of this subpart and using water or steam injection to control NO_X emissions shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine.

(b) The owner or operator of any stationary gas turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and which uses water or steam injection to control NO_X emissions may, as an alternative to operating the continuous monitoring system described in paragraph (a) of this section, install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO_X and O_2 monitors. As an alternative, a CO_2 monitor may be used to adjust the measured NO_X concentrations to 15 percent O_2 by either converting the CO_2 hourly averages to equivalent O_2 concentrations using Equation F–14a or F–14b in appendix F to part 75 of this chapter and making the adjustments to 15 percent O_2, or by using the CO_2 readings directly to make the adjustments, as described in Method 20. If the option to use a CEMS is chosen, the CEMS shall be installed, certified, maintained and operated as follows:

(1) Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO_X and diluent monitors may be performed individually or on a combined basis, *i.e.*, the relative accuracy tests of the CEMS may be performed either:

(i) On a ppm basis (for NO_X) and a percent O_2 basis for oxygen; or

(ii) On a ppm at 15 percent O_2 basis; or

(iii) On a ppm basis (for NO_X) and a percent CO_2 basis (for a CO_2 monitor that uses the procedures in Method 20 to correct the NO_X data to 15 percent O_2).

(2) As specified in § 60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

(3) For purposes of identifying excess emissions, CEMS data must be reduced to hourly averages as specified in § 60.13(h).

(i) For each unit operating hour in which a valid hourly average, as described in paragraph (b)(2) of this section, is obtained for both NO_X and diluent, the data acquisition and handling system must calculate and record the hourly NO_X emissions in the units of the applicable NO_X emission standard under § 60.332(a), *i.e.*, percent NO_X by volume, dry basis, corrected to 15 percent O_2 and International Organization for Standardization (ISO) standard conditions (if required as given in § 60.335(b)(1)). For any hour in which the hourly average O_2 concentration exceeds 19.0 percent O_2, a diluent cap value of 19.0 percent O_2 may be used in the emission calculations.

(ii) A worst case ISO correction factor may be calculated and applied using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air (Ho), minimum ambient temperature (T_a), and minimum combustor inlet absolute pressure (P_o) into the ISO correction equation.

(iii) If the owner or operator has installed a NO_X CEMS to meet the requirements of part 75 of this chapter, and is continuing to meet the ongoing requirements of part 75 of this chapter, the CEMS may be used to meet the requirements of this section, except that the missing data substitution methodology provided for at 40 CFR part 75, subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in § 60.7(c).

(c) For any turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and which does not use steam or water injection to control NO_X emissions, the owner or operator may, but is not required to, for purposes of determining excess emissions, use a CEMS that meets the requirements of paragraph (b) of this section. Also, if the owner or operator has previously submitted and received EPA, State, or local permitting authority approval of a procedure for monitoring compliance with the applicable NO_X emission limit under § 60.332, that approved procedure may continue to be used.

(d) The owner or operator of any new turbine constructed after July 8, 2004, and which uses water or steam injection to control NO_X emissions may elect to use either the requirements in paragraph (a) of this section for continuous water or steam to fuel ratio monitoring or may use a NO_X CEMS installed, certified, operated, maintained, and quality-assured as described in paragraph (b) of this section.

(e) The owner or operator of any new turbine that commences construction after July 8, 2004, and which does not use water or steam injection to control NO_X emissions, may, but is not required to, elect to use a NO_X CEMS installed, certified, operated, maintained, and quality-assured as described in paragraph (b) of this section. Other acceptable monitoring approaches include periodic testing approved by EPA or the State or local permitting authority or continuous parameter monitoring as described in paragraph (f) of this section.

(f) The owner or operator of a new turbine that commences construction after July 8, 2004, which does not use water or steam injection to control NO_X emissions may, but is not required to, perform continuous parameter monitoring as follows:

(1) For a diffusion flame turbine without add-on selective catalytic reduction controls (SCR), the owner or operator shall define at least four parameters indicative of the unit's NO_X formation characteristics and shall monitor these parameters continuously.

(2) For any lean premix stationary combustion turbine, the owner or operator shall continuously monitor the appropriate parameters to determine whether the unit is operating in low-NO_X mode.

(3) For any turbine that uses SCR to reduce NO_X emissions, the owner or operator shall continuously monitor appropriate parameters to verify the proper operation of the emission controls.

(4) For affected units that are also regulated under part 75 of this chapter,

if the owner or operator elects to monitor NO_X emission rate using the methodology in appendix E to part 75 of this chapter, or the low mass emissions methodology in § 75.19 of this chapter, the requirements of this paragraph (f) may be met by performing the parametric monitoring described in section 2.3 of appendix E or in § 75.19(c)(1)(iv)(H) of this chapter.

(g) The steam or water to fuel ratio or other parameters that are continuously monitored as described in paragraphs (a), (d) or (f) of this section shall be monitored during the performance test required under § 60.8, to establish acceptable values and ranges. The owner or operator may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. The owner or operator shall develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO_X emission controls. The plan shall include the parameter(s) monitored and the acceptable range(s) of the parameter(s) as well as the basis for designating the parameter(s) and acceptable range(s). Any supplemental data such as engineering analyses, design specifications, manufacturer's recommendations and other relevant information shall be included in the monitoring plan. For affected units that are also subject to part 75 of this chapter and that use the low mass emissions methodology in § 75.19 of this chapter or the NO_X emission measurement methodology in appendix E to part 75, the owner or operator may meet the requirements of this paragraph by developing and keeping on-site (or at a central location for unmanned facilities) a quality-assurance plan, as described in § 75.19 (e)(5) or in section 2.3 of appendix E and section 1.3.6 of appendix B to part 75 of this chapter.

(h) The owner or operator of any stationary gas turbine subject to the provisions of this subpart:

(1) Shall monitor the total sulfur content of the fuel being fired in the turbine, except as provided in paragraph (h)(3) of this section. The sulfur content of the fuel must be determined using total sulfur methods described in § 60.335(b)(10). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084–82, 94, D5504–01, D6228–98, or Gas Processors Association Standard 2377–86 (all of which are incorporated by reference-see § 60.17), which measure the major sulfur compounds may be used; and

(2) Shall monitor the nitrogen content of the fuel combusted in the turbine, if the owner or operator claims an allowance for fuel bound nitrogen (*i.e.*, if an F-value greater than zero is being or will be used by the owner or operator to calculate STD in § 60.332). The nitrogen content of the fuel shall be determined using methods described in § 60.335(b)(9) or an approved alternative.

(3) Notwithstanding the provisions of paragraph (h)(1) of this section, the owner or operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in § 60.331(u), regardless of whether an existing custom schedule approved by the administrator for subpart GG requires such monitoring. The owner or operator shall use one of the following sources of information to make the required demonstration:

(i) The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or

(ii) Representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.

(4) For any turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and for which a custom fuel monitoring schedule has previously been approved, the owner or operator may, without submitting a special petition to the Administrator, continue monitoring on this schedule.

(i) The frequency of determining the sulfur and nitrogen content of the fuel shall be as follows:

(1) *Fuel oil.* For fuel oil, use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to part 75 of this chapter (*i.e.*, flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank). If an emission allowance is being claimed for fuel-bound nitrogen, the nitrogen content of the oil shall be determined and recorded once per unit operating day.

(2) *Gaseous fuel.* Any applicable nitrogen content value of the gaseous fuel shall be determined and recorded once per unit operating day. For owners and operators that elect not to demonstrate sulfur content using options in paragraph (h)(3) of this section, and for which the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel shall be determined and recorded once per unit operating day.

(3) *Custom schedules.* Notwithstanding the requirements of paragraph (i)(2) of this section, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (i)(3)(i) and (i)(3)(ii) of this section, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in § 60.333.

(i) The two custom sulfur monitoring schedules set forth in paragraphs (i)(3)(i)(A) through (D) and in paragraph (i)(3)(ii) of this section are acceptable, without prior Administrative approval:

(A) The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this subpart. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as specified in paragraph (i)(3)(i)(B), (C), or (D) of this section, as applicable.

(B) If none of the 30 daily measurements of the fuel's total sulfur content exceeds 0.4 weight percent (4000 ppmw), subsequent sulfur content monitoring may be performed at 12 month intervals. If any of the samples taken at 12-month intervals has a total sulfur content between 0.4 and 0.8 weight percent (4000 and 8000 ppmw), follow the procedures in paragraph (i)(3)(i)(C) of this section. If any measurement exceeds 0.8 weight percent (8000 ppmw), follow the procedures in paragraph (i)(3)(i)(D) of this section.

(C) If at least one of the 30 daily measurements of the fuel's total sulfur content is between 0.4 and 0.8 weight percent (4000 and 8000 ppmw), but none exceeds 0.8 weight percent (8000 ppmw), then:

(*1*) Collect and analyze a sample every 30 days for three months. If any sulfur content measurement exceeds 0.8 weight percent (8000 ppmw), follow the procedures in paragraph (i)(3)(i)(D) of this section. Otherwise, follow the procedures in paragraph (i)(3)(i)(C)(*2*) of this section.

(*2*) Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds 0.8 weight percent (8000 ppmw), follow the procedures in paragraph (i)(3)(i)(D) of this section. Otherwise, follow the procedures in paragraph (i)(3)(i)(C)(*3*) of this section.

(*3*) Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds 0.8 weight percent (8000 ppmw), follow the procedures in paragraph (i)(3)(i)(D) of this section. Otherwise, continue to monitor at this frequency.

(D) If a sulfur content measurement exceeds 0.8 weight percent (8000 ppmw), immediately begin daily monitoring according to paragraph (i)(3)(i)(A) of this section. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than 0.8 weight percent (8000 ppmw), are obtained. At that point, the applicable procedures of paragraph (i)(3)(i)(B) or (C) of this section shall be followed.

(ii) The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in section 2.3.6 of appendix D to part 75 of this chapter to determine a custom sulfur sampling schedule, as follows:

(A) If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains/100 scf (*i.e.*, the maximum total sulfur content of natural gas as defined in § 60.331(u)), no additional monitoring of the sulfur content of the gas is required, for the purposes of this subpart.

(B) If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains/100 scf, but none of the sulfur content values (when converted to weight percent sulfur) exceeds 0.4 weight percent (4000 ppmw), then the minimum required sampling frequency shall be one sample at 12 month intervals.

(C) If any sample result exceeds 0.4 weight percent sulfur (4000 ppmw), but none exceeds 0.8 weight percent sulfur (8000 ppmw), follow the provisions of paragraph (i)(3)(i)(C) of this section.

(D) If the sulfur content of any of the 720 hourly samples exceeds 0.8 weight percent (8000 ppmw), follow the provisions of paragraph (i)(3)(i)(D) of this section.

(j) For each affected unit that elects to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content or fuel nitrogen content under this subpart, the owner or operator shall submit reports of excess emissions and monitor downtime, in accordance with § 60.7(c). Excess emissions shall be reported for all periods of unit operation, including startup, shutdown and malfunction. For the purpose of reports required under § 60.7(c), periods of excess emissions and monitor downtime that shall be reported are defined as follows:

(1) Nitrogen oxides.

(i) For turbines using water or steam to fuel ratio monitoring:

(A) An excess emission shall be any unit operating hour for which the average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with § 60.332, as established during the performance test required in § 60.8. Any unit operating hour in which no water or steam is injected into the turbine shall also be considered an excess emission.

(B) A period of monitor downtime shall be any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

(C) Each report shall include the average steam or water to fuel ratio, average fuel consumption, ambient conditions (temperature, pressure, and humidity), gas turbine load, and (if applicable) the nitrogen content of the fuel during each excess emission. You do not have to report ambient conditions if you opt to use the worst case ISO correction factor as specified in § 60.334(b)(3)(ii), or if you are not using the ISO correction equation under the provisions of § 60.335(b)(1).

(ii) If the owner or operator elects to take an emission allowance for fuel bound nitrogen, then excess emissions and periods of monitor downtime are as described in paragraphs (j)(1)(ii)(A) and (B) of this section.

(A) An excess emission shall be the period of time during which the fuel-bound nitrogen (N) is greater than the value measured during the performance test required in § 60.8 and used to determine the allowance. The excess emission begins on the date and hour of the sample which shows that N is greater than the performance test value, and ends with the date and hour of a subsequent sample which shows a fuel nitrogen content less than or equal to the performance test value.

(B) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour that a required sample is taken, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

(iii) For turbines using NO_X and diluent CEMS:

(A) An hour of excess emissions shall be any unit operating hour in which

the 4-hour rolling average NO_X concentration exceeds the applicable emission limit in § 60.332(a)(1) or (2). For the purposes of this subpart, a ''4-hour rolling average NO_X concentration'' is the arithmetic average of the average NO_X concentration measured by the CEMS for a given hour (corrected to 15 percent O_2 and, if required under § 60.335(b)(1), to ISO standard conditions) and the three unit operating hour average NO_X concentrations immediately preceding that unit operating hour.

(B) A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour, for either NO_X concentration or diluent (or both).

(C) Each report shall include the ambient conditions (temperature, pressure, and humidity) at the time of the excess emission period and (if the owner or operator has claimed an emission allowance for fuel bound nitrogen) the nitrogen content of the fuel during the period of excess emissions. You do not have to report ambient conditions if you opt to use the worst case ISO correction factor as specified in § 60.334(b)(3)(ii), or if you are not using the ISO correction equation under the provisions of § 60.335(b)(1).

(iv) For owners or operators that elect, under paragraph (f) of this section, to monitor combustion parameters or parameters that document proper operation of the NO_X emission controls:

(A) An excess emission shall be a 4-hour rolling unit operating hour average in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the unit.

(B) A period of monitor downtime shall be a unit operating hour in which any of the required parametric data are either not recorded or are invalid.

(2) Sulfur dioxide. If the owner or operator is required to monitor the sulfur content of the fuel under paragraph (h) of this section:

(i) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 weight percent and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(ii) If the option to sample each delivery of fuel oil has been selected, the owner or operator shall immediately switch to one of the other oil sampling options (*i.e.*, daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.8 weight percent. The owner or operator shall continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and shall evaluate excess emissions according to paragraph (j)(2)(i) of this section. When all of the fuel from the delivery has been burned, the owner or operator may resume using the as-delivered sampling option.

(iii) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime shall include only unit operating hours, and ends on the date and hour of the next valid sample.

(3) *Ice fog*. Each period during which an exemption provided in § 60.332(f) is in effect shall be reported in writing to the Administrator quarterly. For each period the ambient conditions existing during the period, the date and time the air pollution control system was deactivated, and the date and time the air pollution control system was reactivated shall be reported. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

(4) *Emergency fuel*. Each period during which an exemption provided in § 60.332(k) is in effect shall be included in the report required in § 60.7(c). For each period, the type, reasons, and duration of the firing of the emergency fuel shall be reported.

(5) All reports required under § 60.7(c) shall be postmarked by the 30th day

following the end of each 6-month period.

[44 FR 52798, Sept. 10, 1979, as amended at 47 FR 3770, Jan. 27, 1982; 65 FR 61759, Oct. 17, 2000; 69 FR 41360, July 8, 2004; 71 FR 9457, Feb. 24, 2006]

§ 60.335 Test methods and procedures.

(a) The owner or operator shall conduct the performance tests required in § 60.8, using either

(1) EPA Method 20,

(2) ASTM D6522–00 (incorporated by reference, see § 60.17), or

(3) EPA Method 7E and either EPA Method 3 or 3A in appendix A to this part, to determine NO_X and diluent concentration.

(4) Sampling traverse points are to be selected following Method 20 or Method 1, (non-particulate procedures) and sampled for equal time intervals. The sampling shall be performed with a traversing single-hole probe or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

(5) Notwithstanding paragraph (a)(4) of this section, the owner or operator may test at few points than are specified in Method 1 or Method 20 if the following conditions are met:

(i) You may perform a stratification test for NO_X and diluent pursuant to

(A) [Reserved]

(B) The procedures specified in section 6.5.6.1(a) through (e) appendix A to part 75 of this chapter.

(ii) Once the stratification sampling is completed, the owner or operator may use the following alternative sample point selection criteria for the performance test:

(A) If each of the individual traverse point NO_X concentrations, normalized to 15 percent O_2, is within ±10 percent of the mean normalized concentration for all traverse points, then you may use 3 points (located either 16.7, 50.0, and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The 3 points shall be located along the measurement line that exhibited the highest average normalized NO_X concentration during the stratification test; or

(B) If each of the individual traverse point NO_X concentrations, normalized to 15 percent O_2, is within ±5 percent of the mean normalized concentration for all traverse points, then you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid.

(6) Other acceptable alternative reference methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the applicable nitrogen oxides emission limitation in § 60.332 and shall meet the performance test requirements of § 60.8 as follows:

(1) For each run of the performance test, the mean nitrogen oxides emission concentration (NO_{Xo}) corrected to 15 percent O_2 shall be corrected to ISO standard conditions using the following equation. Notwithstanding this requirement, use of the ISO correction equation is optional for: Lean premix stationary combustion turbines; units used in association with heat recovery steam generators (HRSG) equipped with duct burners; and units equipped with add-on emission control devices:

$$NO_X=(NO_{Xo})(P_r/P_o)^{0.5}\ e^{19\ (Ho-0.00633)}\ (288\ °K/T_a)^{1.53}$$

Where:

NO_X = emission concentration of NO_X at 15 percent O_2 and ISO standard ambient conditions, ppm by volume, dry basis,

NO_{Xo} = mean observed NO_X concentration, ppm by volume, dry basis, at 15 percent O_2,

P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg,

P_o = observed combustor inlet absolute pressure at test, mm Hg,

H_o = observed humidity of ambient air, g H_2O/g air,

e = transcendental constant, 2.718, and

T_a = ambient temperature, °K.

(2) The 3-run performance test required by § 60.8 must be performed within ±5 percent at 30, 50, 75, and 90-to-100 percent of peak load or at four evenly-spaced load points in the normal operating range of the gas turbine, including the minimum point in the operating range and 90-to-100 percent of peak load, or at the highest achievable

load point if 90-to-100 percent of peak load cannot be physically achieved in practice. If the turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel. Notwithstanding these requirements, performance testing is not required for any emergency fuel (as defined in § 60.331).

(3) For a combined cycle turbine system with supplemental heat (duct burner), the owner or operator may elect to measure the turbine NO_X emissions after the duct burner rather than directly after the turbine. If the owner or operator elects to use this alternative sampling location, the applicable NO_X emission limit in § 60.332 for the combustion turbine must still be met.

(4) If water or steam injection is used to control NO_X with no additional post-combustion NO_X control and the owner or operator chooses to monitor the steam or water to fuel ratio in accordance with § 60.334(a), then that monitoring system must be operated concurrently with each EPA Method 20, ASTM D6522–00 (incorporated by reference, see § 60.17), or EPA Method 7E run and shall be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable § 60.332 NO_X emission limit.

(5) If the owner operator elects to claim an emission allowance for fuel bound nitrogen as described in § 60.332, then concurrently with each reference method run, a representative sample of the fuel used shall be collected and analyzed, following the applicable procedures described in § 60.335(b)(9). These data shall be used to determine the maximum fuel nitrogen content for which the established water (or steam) to fuel ratio will be valid.

(6) If the owner or operator elects to install a CEMS, the performance evaluation of the CEMS may either be conducted separately (as described in paragraph (b)(7) of this section) or as part of the initial performance test of the affected unit.

(7) If the owner or operator elects to install and certify a NO_X CEMS under § 60.334(e), then the initial performance test required under § 60.8 may be done in the following alternative manner:

(i) Perform a minimum of 9 reference method runs, with a minimum time per run of 21 minutes, at a single load level, between 90 and 100 percent of peak (or the highest physically achievable) load.

(ii) Use the test data both to demonstrate compliance with the applicable NO_X emission limit under § 60.332 and to provide the required reference method data for the RATA of the CEMS described under § 60.334(b).

(iii) The requirement to test at three additional load levels is waived.

(8) If the owner or operator elects under § 60.334(f) to monitor combustion parameters or parameters indicative of proper operation of NO_X emission controls, the appropriate parameters shall be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in § 60.334(g).

(9) To determine the fuel bound nitrogen content of fuel being fired (if an emission allowance is claimed for fuel bound nitrogen), the owner or operator may use equipment and procedures meeting the requirements of:

(i) For liquid fuels, ASTM D2597–94 (Reapproved 1999), D6366–99, D4629–02, D5762–02 (all of which are incorporated by reference, *see* § 60.17); or

(ii) For gaseous fuels, shall use analytical methods and procedures that are accurate to within 5 percent of the instrument range and are approved by the Administrator.

(10) If the owner or operator is required under § 60.334(i)(1) or (3) to periodically determine the sulfur content of the fuel combusted in the turbine, a minimum of three fuel samples shall be collected during the performance test. Analyze the samples for the total sulfur content of the fuel using:

(i) For liquid fuels, ASTM D129–00, D2622–98, D4294–02, D1266–98, D5453–00 or D1552–01 (all of which are incorporated by reference, *see* § 60.17); or

(ii) For gaseous fuels, ASTM D1072–80, 90 (Reapproved 1994); D3246–81, 92, 96; D4468–85 (Reapproved 2000); or D6667–01 (all of which are incorporated by reference, see § 60.17). The applicable

ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the prior approval of the Administrator.

(11) The fuel analyses required under paragraphs (b)(9) and (b)(10) of this section may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) Instead of using the equation in paragraph (b)(1) of this section, manufacturers may develop ambient condition correction factors to adjust the nitrogen oxides emission level measured by the performance test as provided in § 60.8 to ISO standard day conditions.

[69 FR 41363, July 8, 2004, as amended at 71 FR 9458, Feb. 24, 2006]

Subpart HH—Standards of Performance for Lime Manufacturing Plants

SOURCE: 49 FR 18080, Apr. 26, 1984, unless otherwise noted.

§ 60.340 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each rotary lime kiln used in the manufacture of lime.

(b) The provisions of this subpart are not applicable to facilities used in the manufacture of lime at kraft pulp mills.

(c) Any facility under paragraph (a) of this section that commences construction or modification after May 3, 1977, is subject to the requirements of this subpart.

§ 60.341 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in the General Provisions.

(a) *Lime manufacturing plant* means any plant which uses a rotary lime kiln to produce lime product from limestone by calcination.

(b) *Lime product* means the product of the calcination process including, but not limited to, calcitic lime, dolomitic lime, and dead-burned dolomite.

(c) *Positive-pressure fabric filter* means a fabric filter with the fans on the upstream side of the filter bags.

(d) *Rotary lime kiln* means a unit with an inclined rotating drum that is used to produce a lime product from limestone by calcination.

(e) *Stone feed* means limestone feedstock and millscale or other iron oxide additives that become part of the product.

§ 60.342 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any rotary lime kiln any gases which:

(1) Contain particulate matter in excess of 0.30 kilogram per megagram (0.60 lb/ton) of stone feed.

(2) Exhibit greater than 15 percent opacity when exiting from a dry emission control device.

§ 60.343 Monitoring of emissions and operations.

(a) The owner or operator of a facility that is subject to the provisions of this subpart shall install, calibrate, maintain, and operate a continuous monitoring system, except as provided in paragraphs (b) and (c) of this section, to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from any rotary lime kiln. The span of this system shall be set at 40 percent opacity.

(b) The owner or operator of any rotary lime kiln having a control device with a multiple stack exhaust or a roof monitor may, in lieu of the continuous opacity monitoring requirement of § 60.343(a), monitor visible emissions at least once per day of operation by using a certified visible emissions observer who, for each site where visible emissions are observed, will perform three Method 9 tests and record the results. Visible emission observations shall occur during normal operation of

the rotary lime kiln at least once per day. For at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed, and the corresponding feed rate of the kiln shall also be recorded. Records shall be maintained of any 6-minute average that is in excess of the emissions specified in § 60.342(a) of this subpart.

(c) The owner or operator of any rotary lime kiln using a wet scrubbing emission control device subject to the provisions of this subpart shall not be required to monitor the opacity of the gases discharged as required in paragraph (a) of this section, but shall install, calibrate, maintain, operate, and record the resultant information from the following continuous monitoring devices:

(1) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be accurate within ±250 pascals (one inch of water).

(2) A monitoring device for continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ±5 percent of the design scrubbing liquid supply pressure.

(d) For the purpose of conducting a performance test under § 60.8, the owner or operator of any lime manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a device for measuring the mass rate of stone feed to any affected rotary lime kiln. The measuring device used must be accurate to within ±5 percent of the mass rate over its operating range.

(e) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as all 6-minute periods during which the average opacity of the visible emissions from any lime kiln subject to paragraph (a) of this subpart is greater than 15 percent or, in the case of wet scrubbers, any period in which the scrubber pressure drop or scrubbing liquid supply pressure is greater than 30 percent below that established during the performance test. If visible emission observations are made according to paragraph (b) of this section, reports of excess emissions shall be submitted semiannually.

[49 FR 18080, Apr. 26, 1984, as amended at 52 FR 4773, Feb. 17, 1987; 54 FR 6675, Feb. 14, 1989; 65 FR 61760, Oct. 17, 2000]

§ 60.344 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.342(a) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/PK)$$

where:

E=emission rate of particulate matter, kg/Mg (1b/ton) of stone feed.

c_s=concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=stone feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (7000 gr/lb).

(2) Method 5 shall be used at negative-pressure fabric filters and other types of control devices and Method 5D shall be used at positive-pressure fabric filters to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The monitoring device of § 60.343(d) shall be used to determine the stone feed rate (P) for each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) During the particulate matter run, the owner or operator shall use the monitoring devices in § 60.343(c)(1) and (2) to determine the average pressure loss of the gas stream through the scrubber and the average scrubbing liquid supply pressure.

[54 FR 6675, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart KK—Standards of Performance for Lead-Acid Battery Manufacturing Plants

SOURCE: 47 FR 16573, Apr. 16, 1982, unless otherwise noted.

§ 60.370 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the affected facilities listed in paragraph (b) of this section at any lead-acid battery manufacturing plant that produces or has the design capacity to produce in one day (24 hours) batteries containing an amount of lead equal to or greater than 5.9 Mg (6.5 tons).

(b) The provisions of this subpart are applicable to the following affected facilities used in the manufacture of lead-acid storage batteries:

(1) Grid casting facility.

(2) Paste mixing facility.

(3) Three-process operation facility.

(4) Lead oxide manufacturing facility.

(5) Lead reclamation facility.

(6) Other lead-emitting operations.

(c) Any facility under paragraph (b) of this section the construction or modification of which is commenced after January 14, 1980, is subject to the requirements of this subpart.

§ 60.371 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Grid casting facility* means the facility which includes all lead melting pots and machines used for casting the grid used in battery manufacturing.

(b) *Lead-acid battery manufacturing plant* means any plant that produces a storage battery using lead and lead compounds for the plates and sulfuric acid for the electrolyte.

(c) *Lead oxide manufacturing facility* means a facility that produces lead oxide from lead, including product recovery.

(d) *Lead reclamation facility* means the facility that remelts lead scrap and casts it into lead ingots for use in the battery manufacturing process, and which is not a furnace affected under subpart L of this part.

(e) *Other lead-emitting operation* means any lead-acid battery manufacturing plant operation from which lead emissions are collected and ducted to the atmosphere and which is not part of a grid casting, lead oxide manufacturing, lead reclamation, paste mixing, or three-process operation facility, or a furnace affected under subpart L of this part.

(f) *Paste mixing facility* means the facility including lead oxide storage, conveying, weighing, metering, and charging operations; paste blending, handling, and cooling operations; and plate pasting, takeoff, cooling, and drying operations.

(g) *Three-process operation facility* means the facility including those processes involved with plate stacking, burning or strap casting, and assembly of elements into the battery case.

§ 60.372 Standards for lead.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any grid casting facility any gases that contain lead in excess of 0.40 milligram of lead per dry standard cubic meter of exhaust (0.000175 gr/dscf).

(2) From any paste mixing facility any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(3) From any three-process operation facility any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(4) From any lead oxide manufacturing facility any gases that contain in excess of 5.0 milligrams of lead per kilogram of lead feed (0.010 lb/ton).

(5) From any lead reclamation facility any gases that contain in excess of 4.50 milligrams of lead per dry standard cubic meter of exhaust (0.00197 gr/dscf).

(6) From any other lead-emitting operation any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(7) From any affected facility other than a lead reclamation facility any gases with greater than 0 percent opacity (measured according to Method 9 and rounded to the nearest whole percentage).

(8) From any lead reclamation facility any gases with greater than 5 percent opacity (measured according to Method 9 and rounded to the nearest whole percentage).

(b) When two or more facilities at the same plant (except the lead oxide manufacturing facility) are ducted to a common control device, an equivalent standard for the total exhaust from the commonly controlled facilities shall be determined as follows:

$$S_e = \sum_{a=1}^{N} S_a (Q_{sd_a} / Q_{sd_T})$$

Where:

S_e=is the equivalent standard for the total exhaust stream.

S_a=is the actual standard for each exhaust stream ducted to the control device.

N=is the total number of exhaust streams ducted to the control device.

Q_{sda}=is the dry standard volumetric flow rate of the effluent gas stream from each facility ducted to the control device.

Q_{sdT}=is the total dry standard volumetric flow rate of all effluent gas streams ducted to the control device.

[47 FR 16573, Apr. 16, 1982, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.373 Monitoring of emissions and operations.

The owner or operator of any lead-acid battery manufacturing facility subject to the provisions of this subpart and controlled by a scrubbing system(s) shall install, calibrate, maintain, and operate a monitoring device(s) that measures and records the pressure drop across the scrubbing system(s) at least once every 15 minutes. The monitoring device shall have an accuracy of ±5 percent over its operating range.

§ 60.374 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the lead standards in § 60.372, except § 60.372(a)(4), as follows:

(1) Method 12 shall be used to determine the lead concentration and, if applicable, the volumetric flow rate (Q_{sda}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) When different operations in a three-process operation facility are ducted to separate control devices, the lead emission concentration (C) from the facility shall be determined as follows:

$$C = \left[\sum_{a=1}^{n} \left(C_s Q_{sda} \right) \right] / \sum_{a=1}^{n} Q_{sda}$$

where:

C=concentration of lead emissions for the entire facility, mg/dscm (gr/dscf).

C_a=concentration of lead emissions from facility ''a'', mg/dscm (gr/dscf).

Q_{sda}=volumetric flow rate of effluent gas from facility ''a'', dscm/hr (dscf/hr).

N=total number of control devices to which separate operations in the facility are ducted.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity. The opacity numbers shall be rounded off to the nearest whole percentage.

(c) The owner or operator shall determine compliance with the lead standard in § 60.372(a)(4) as follows:

(1) The emission rate (E) from lead oxide manufacturing facility shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{M} C_{Pbi} Q_{sdi} \right) / (PK)$$

where:

E=emission rate of lead, mg/kg (lb/ton) of lead charged.

C_{Pbi}=concentration of lead from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (sdcf/hr).

M=number of emission points in the affected facility.

P=lead feed rate to the facility, kg/hr (ton/hr).

K=conversion factor, 1.0 mg/mg (7000 gr/lb).

(2) Method 12 shall be used to determine the lead concentration (C_{Pb}) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The average lead feed rate (P) shall be determined for each run using the following equation:

$$P=N\ W/\Theta$$

where:

N=number of lead pigs (ingots) charged.

W=average mass of a pig, kg (ton).

Θ=duration of run, hr.

[54 FR 6675, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart LL—Standards of Performance for Metallic Mineral Processing Plants

SOURCE: 49 FR 6464, Feb. 21, 1984, unless otherwise noted.

§ 60.380 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in metallic mineral processing plants: Each crusher and screen in open-pit mines; each crusher, screen, bucket elevator, conveyor belt transfer point, thermal dryer, product packaging station, storage bin, enclosed storage area, truck loading station, truck unloading station, railcar loading station, and railcar unloading station at the mill or concentrator with the following exceptions. All facilities located in underground mines are exempted from the provisions of this subpart. At uranium ore processing plants, all facilities subsequent to and including the beneficiation of uranium ore are exempted from the provisions of this subpart.

(b) An affected facility under paragraph (a) of this section that commences construction or modification after August 24, 1982, is subject to the requirements of this part.

§ 60.381 Definitions.

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

Bucket elevator means a conveying device for metallic minerals consisting of a head and foot assembly that supports and drives an endless single or double strand chain or belt to which buckets are attached.

Capture system means the equipment used to capture and transport particulate matter generated by one or more affected facilities to a control device.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities at a metallic mineral processing plant.

Conveyor belt transfer point means a point in the conveying operation where the metallic mineral or metallic mineral concentrate is transferred to or from a conveyor belt except where the metallic mineral is being transferred to a stockpile.

Crusher means a machine used to crush any metallic mineral and includes feeders or conveyors located immediately below the crushing surfaces. Crushers include, but are not limited to, the following types: jaw, gyratory, cone, and hammermill.

Enclosed storage area means any area covered by a roof under which metallic minerals are stored prior to further processing or loading.

Metallic mineral concentrate means a material containing metallic compounds in concentrations higher than naturally occurring in ore but requiring additional processing if pure metal is to be isolated. A metallic mineral concentrate contains at least one of the following metals in any of its oxidation states and at a concentration that contributes to the concentrate's commercial value: Aluminum, copper, gold, iron, lead, molybdenum, silver, titanium, tungsten, uranium, zinc, and zirconium. This definition shall not be construed as requiring that material containing metallic compounds be refined to a pure metal in order for the material to be considered a metallic mineral concentrate to be covered by the standards.

Metallic mineral processing plant means any combination of equipment that produces metallic mineral concentrates from ore. Metallic mineral processing commences with the mining of ore and includes all operations either up to and including the loading of wet or dry concentrates or solutions of metallic minerals for transfer to facilities at non-adjacent locations that will subsequently process metallic concentrates into purified metals (or other products), or up to and including all material transfer and storage operations that precede the operations that produce refined metals (or other products) from metallic mineral concentrates at facilities adjacent to the metallic mineral processing plant. This definition shall not be construed as requiring that mining of ore be conducted in order for the combination of equipment to be considered a metallic mineral processing plant. (See also the definition of *metallic mineral concentrate*.)

Process fugitive emissions means particulate matter emissions from an affected facility that are not collected by a capture system.

Product packaging station means the equipment used to fill containers with metallic compounds or metallic mineral concentrates.

Railcar loading station means that portion of a metallic mineral processing plant where metallic minerals or metallic mineral concentrates are loaded by a conveying system into railcars.

Railcar unloading station means that portion of a metallic mineral processing plant where metallic ore is unloaded from a railcar into a hopper, screen, or crusher.

Screen means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series and retaining oversize material on the mesh surfaces (screens).

Stack emissions means the particulate matter captured and released to the atmosphere through a stack, chimney, or flue.

Storage bin means a facility for storage (including surge bins and hoppers) of metallic minerals prior to further processing or loading.

Surface moisture means water that is not chemically bound to a metallic mineral or metallic mineral concentrate.

Thermal dryer means a unit in which the surface moisture content of a metallic mineral or a metallic mineral concentrate is reduced by direct or indirect contact with a heated gas stream.

Truck loading station means that portion of a metallic mineral processing plant where metallic minerals or metallic mineral concentrates are loaded by a conveying system into trucks.

Truck unloading station means that portion of a metallic mineral processing plant where metallic ore is unloaded from a truck into a hopper, screen, or crusher.

[49 FR 6464, Feb. 21, 1984, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.382 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an affected facility any stack emissions that:

(1) Contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.02 g/dscm).

(2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing emission control device.

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an affected facility any process fugitive emissions that exhibit greater than 10 percent opacity.

[49 FR 6464, Feb. 21, 1984, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.383 Reconstruction.

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital cost that would be required to construct a comparable new facility'' under § 60.15. Ore-contact surfaces are: Crushing surfaces; screen meshes, bars, and plates; conveyor belts; elevator buckets; and pan feeders.

(b) Under § 60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) that are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 24, 1982.

§ 60.384 Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through the scrubber for any affected facility using a wet scrubbing emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the scrubbing liquid flow rate to a wet scrubber for any affected facility using any type of wet scrubbing emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions.

§ 60.385 Recordkeeping and reporting requirements.

(a) The owner or operator subject to the provisions of this subpart shall conduct a performance test and submit to the Administrator a written report of the results of the test as specified in § 60.8(a).

(b) During the initial performance test of a wet scrubber, and at least weekly thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(c) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) or liquid flow rate differ by more than ±30 percent from the average obtained during the most recent performance test.

(d) The reports required under paragraph (c) shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

(e) The requirements of this subsection remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with requirements established by the State.

[49 FR 6464, Feb. 21, 1984, as amended at 54 FR 6676, Feb. 14, 1989; 65 FR 61760, Oct. 17, 2000]

§ 60.386 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards § 60.382 as follows:

(1) Method 5 or 17 shall be used to determine the particulate matter concentration. The sample volume for each run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature.

For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121 °C (250 °F)) in order to prevent water condensation on the filter.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions and process fugitive emissions. The observer shall read opacity only when emissions are clearly identified as emanating solely from the affected facility being observed.

(c) To comply with § 60.385(c), the owner or operator shall use the monitoring devices in § 60.384(a) and (b) to determine the pressure loss of the gas stream through the scrubber and scrubbing liquid flow rate at any time during each particulate matter run, and the average of the three determinations shall be computed.

[54 FR 6676, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart MM—Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations

SOURCE: 45 FR 85415, Dec. 24, 1980, unless otherwise noted.

§ 60.390 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in an automobile or light-duty truck assembly plant: each prime coat operation, each guide coat operation, and each topcoat operation.

(b) Exempted from the provisions of this subpart are operations used to coat plastic body components or all-plastic automobile or light-duty truck bodies on separate coating lines. The attachment of plastic body parts to a metal body before the body is coated does not cause the metal body coating operation to be exempted.

(c) The provisions of this subpart apply to any affected facility identified in paragraph (a) of this section that begins construction, reconstruction, or modification after October 5, 1979.

§ 60.391 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

Applied coating solids means the volume of dried or cured coating solids which is deposited and remains on the surface of the automobile or light-duty truck body.

Automobile means a motor vehicle capable of carrying no more than 12 passengers.

Automobile and light-duty truck body means the exterior surface of an automobile or light-duty truck including hoods, fenders, cargo boxes, doors, and grill opening panels.

Bake oven means a device that uses heat to dry or cure coatings.

Electrodeposition (EDP) means a method of applying a prime coat by which the automobile or light-duty truck body is submerged in a tank filled with coating material and an electrical field is used to effect the deposition of the coating material on the body.

Electrostatic spray application means a spray application method that uses an electrical potential to increase the transfer efficiency of the coating solids. Electrostatic spray application can be used for prime coat, guide coat, or topcoat operations.

Flash-off area means the structure on automobile and light-duty truck assembly lines between the coating application system (dip tank or spray booth) and the bake oven.

Guide coat operation means the guide coat spray booth, flash-off area and bake oven(s) which are used to apply and dry or cure a surface coating between the prime coat and topcoat operation on the components of automobile and light-duty truck bodies.

Light-duty truck means any motor vehicle rated at 3,850 kilograms gross vehicle weight or less, designed mainly to transport property.

Plastic body means an automobile or light-duty truck body constructed of synthetic organic material.

Plastic body component means any component of an automobile or light-duty truck exterior surface constructed of synthetic organic material.

Prime coat operation means the prime coat spray booth or dip tank, flash-off area, and bake oven(s) which are used to apply and dry or cure the initial coating on components of automobile or light-duty truck bodies.

Purge or *line purge* means the coating material expelled from the spray system when clearing it.

Solids Turnover Ratio (R_T) means the ratio of total volume of coating solids that is added to the EDP system in a calendar month divided by the total volume design capacity of the EDP system.

Solvent-borne means a coating which contains five percent or less water by weight in its volatile fraction.

Spray application means a method of applying coatings by atomizing the coating material and directing the atomized material toward the part to be coated. Spray applications can be used for prime coat, guide coat, and topcoat operations.

Spray booth means a structure housing automatic or manual spray application equipment where prime coat, guide coat, or topcoat is applied to components of automobile or light-duty truck bodies.

Surface coating operation means any prime coat, guide coat, or topcoat operation on an automobile or light-duty truck surface coating line.

Topcoat operation means the topcoat spray booth, flash-off area, and bake oven(s) which are used to apply and dry or cure the final coating(s) on components of automobile and light-duty truck bodies.

Transfer efficiency means the ratio of the amount of coating solids transferred onto the surface of a part or product to the total amount of coating solids used.

VOC content means all volatile organic compounds that are in a coating expressed as kilograms of VOC per liter of coating solids.

Volume Design Capacity of EDP System (LE) means the total liquid volume that is contained in the EDP system (tank, pumps, recirculating lines, filters, etc.) at its designed liquid operating level.

Waterborne or *water reducible* means a coating which contains more than five weight percent water in its volatile fraction.

(b) The nomenclature used in this subpart has the following meanings:

C_{aj}=concentration of VOC (as carbon) in the effluent gas flowing through stack (j) leaving the control device (parts per million by volume),

C_{bi}=concentration of VOC (as carbon) in the effluent gas flowing through stack (i) entering the control device (parts per million by volume),

C_{fk}=concentration of VOC (as carbon) in the effluent gas flowing through exhaust stack (k) not entering the control device (parts per million by volume),

D_{ci}=density of each coating (i) as received (kilograms per liter),

D_{dj}=density of each type VOC dilution solvent (j) added to the coatings, as received (kilograms per liter),

D_r=density of VOC recovered from an affected facility (kilograms per liter),

E=VOC destruction or removal efficiency of the control device,

F=fraction of total VOC which is emitted by an affected facility that enters the control device,

G=volume weighted average mass of VOC per volume of applied solids (kilograms per liter),

L_{ci}=volume of each coating (i) consumed, as received (liters),

L_{cil} = Volume of each coating (i) consumed by each application method (l), as received (liters),

L_{dj}=volume of each type VOC dilution solvent (j) added to the coatings, as received (liters),

L_r=volume of VOC recovered from an affected facility (liters),

L_s=volume of solids in coatings consumed (liters),

L_E=the total volume of the EDP system (liters),

M_d=total mass of VOC in dilution solvent (kilograms),

M_0=total mass of VOC in coatings as received (kilograms),

M_r=total mass of VOC recovered from an affected facility (kilograms),

N=volume weighted average mass of VOC per volume of applied coating solids after the control device

$$\frac{\text{kilograms of VOC}}{\text{liter of applied solids}},$$

Q_{aj}=volumetric flow rate of the effluent gas flowing through stack (j) leaving the control device (dry standard cubic meters per hour),

Q_{bi}=volumetric flow rate of the effluent gas flowing through stack (i) entering the control device (dry standard cubic meters per hour),

Q_{fk}=volumetric flow rate of the effluent gas flowing through exhaust stack (k) not entering the control device (dry standard cubic meters per hour),

T=overall transfer efficiency,

T_l=transfer efficiency for application method (*l*),

V_{si}=proportion of solids by volume in each coating (i) as received

$$\frac{\text{liter solids}}{\text{liter coating}}, \text{ and}$$

W_{oi}=proportion of VOC by weight in each coating (i), as received

$$\frac{\text{kilograms VOC}}{\text{kilograms coating}}$$

[45 FR 85415, Dec. 24, 1980, as amended at 59 FR 51386, Oct. 11, 1994; 65 FR 61760, Oct. 17, 2000]

§ 60.392 Standards for volatile organic compounds.

On and after the date on which the initial performance test required by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility VOC emissions in excess of:

(a) Prime Coat Operation. (1) For each EDP prime coat operation:

(i) 0.17 kilogram of VOC per liter of applied coating solids when R_T is 0.16 or greater.

(ii) $0.17 \times 350^{(0.160-R_T)}$ kg of VOC per liter of applied coating solids when R_T is greater than or equal to 0.040 and less than 0.160.

(iii) When R_T is less than 0.040, there is no emission limit.

(2) For each nonelectrodeposition prime coat operation: 0.17 kilogram of VOC per liter of applied coating solids.

(b) 1.40 kilograms of VOC per liter of applied coating solids from each guide coat operation.

(c) 1.47 kilograms of VOC per liter of applied coating solids from each topcoat operation.

[45 FR 85415, Dec. 24, 1980, as amended at 59 FR 51386, Oct. 11, 1994]

§ 60.393 Performance test and compliance provisions.

(a) Section 60.8 (d) and (f) do not apply to the performance test procedures required by this section.

(b) The owner or operator of an affected facility shall conduct an initial performance test in accordance with § 60.8(a) and thereafter for each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining the monthly volume weighted average mass of VOC emitted per volume of applied coating solids.

(1) The owner or operator shall use the following procedures for each affected facility which does not use a capture system and a control device to comply with the applicable emission limit specified under § 60.392.

(i) Calculate the volume weighted average mass of VOC per volume of applied coating solids for each calendar month for each affected facility. The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or from data determined by an analysis of each coating, as received, by Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine data used in the calculation of the VOC content of coatings by Method 24 or an equivalent or alternative method. The owner or operator shall determine from company records on a monthly basis the volume of coating consumed, as received, and the mass of solvent used for thinning purposes. The volume weighted average of the total mass of VOC per volume of coating solids used each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC used in each calendar month for each affected facility by the following equation where ''n'' is the total number of coatings used and ''m'' is the total number of VOC solvents used:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

[$\Sigma L_{dj} D_{dj}$ will be zero if no VOC solvent is added to the coatings, as received].

(B) Calculate the total volume of coating solids used in each calendar month for each affected facility by the following equation where ''n'' is the total number of coatings used:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

(C) Select the appropriate transfer efficiency (T) from the following tables for each surface coating operation:

Application method	Transfer efficiency
Air Atomized Spray (waterborne coating)	0.39
Air Atomized Spray (solvent-borne coating)	0.50
Manual Electrostatic Spray	0.75
Automatic Electrostatic Spray	0.95
Electrodeposition	1.00

The values in the table above represent an overall system efficiency which includes a total capture of purge. If a spray system uses line purging after each vehicle and does not collect any of the purge material, the following table shall be used:

Application method	Transfer efficiency
Air Atomized Spray (waterborne coating)	0.30
Air Atomized Spray (solvent-borne coating)	0.40
Manual Electrostatic Spray	0.62
Automatic Electrostatic Spray	0.75

If the owner or operator can justify to the Administrator's satisfaction that other values for transfer efficiencies are appropriate, the Administrator will approve their use on a case-by-case basis.

(*l*) When more than one application method (*l*) is used on an individual surface coating operation, the owner or operator shall perform an analysis to determine an average transfer efficiency by the following equation where ''n'' is the total number of coatings used and ''p'' is the total number of application methods:

$$T = \frac{\sum_{i=1}^{n} T_l V_{si} L_{cil}}{\sum_{l=1}^{p} L_s}$$

(D) Calculate the volume weighted average mass of VOC per volume of applied coating solids (G) during each calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T}$$

(E) For each EDP prime coat operation, calculate the turnover ratio (R_T) by the following equation:

$$R_T = \frac{L_S}{L_E}, \text{ truncated after 3 decimal places.}$$

Then calculate or select the appropriate limit according to § 60.392(a).

(ii) If the volume weighted average mass of VOC per volume of applied coating solids (G), calculated on a calendar month basis, is less than or equal to the applicable emission limit specified in § 60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purpose of this subpart.

(2) The owner or operator shall use the following procedures for each affected facility which uses a capture system and a control device that destroys VOC (e.g., incinerator) to comply with the applicable emission limit specified under § 60.392.

(i) Calculate the volume weighted average mass of VOC per volume of applied coating solids (G) during each calendar month for each affected facility as described under § 60.393(c)(1)(i).

(ii) Calculate the volume weighted average mass of VOC per volume of applied solids emitted after the control device, by the following equation: N=G[1–FE]

(A) Determine the fraction of total VOC which is emitted by an affected facility that enters the control device by using the following equation where ''n'' is the total number of stacks entering the control device and ''p'' is the total number of stacks not connected to the control device:

$$\sum_{i=1}^{n}$$

If the owner can justify to the Administrator's satisfaction that another method will give comparable results, the Administrator will approve its use on a case-by-case basis.

(*1*) In subsequent months, the owner or operator shall use the most recently determined capture fraction for the performance test.

(B) Determines the destruction efficiency of the control device using values of the volumetric flow rate of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation where ''n'' is the total number of stacks entering the control device and ''m'' is the total number of stacks leaving the control device:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}$$

(*1*) In subsequent months, the owner or operator shall use the most recently determined VOC destruction efficiency for the performance test.

(C) If an emission control device controls the emissions from more than one affected facility, the owner or operator shall measure the VOC concentration (C_{bi}) in the effluent gas entering the control device (in parts per million by volume) and the volumetric flow rate (Q_{bi}) of the effluent gas (in dry standard cubic meters per hour) entering the device through each stack. The destruction or removal efficiency determined using these data shall be applied to each affected facility served by the control device.

(iii) If the volume weighted average mass of VOC per volume of applied solids emitted after the control device (N) calculated on a calendar month basis is less than or equal to the applicable emission limit specified in § 60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purposes of this subpart.

(3) The owner or operator shall use the following procedures for each affected facility which uses a capture system and a control device that recovers the VOC (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.392.

(i) Calculate the mass of VOC (M_o+M_d) used during each calendar month for each affected facility as described under § 60.393(c)(1)(i).

(ii) Calculate the total volume of coating solids (L_s) used in each calendar month for each affected facility as described under § 60.393(c)(1)(i).

(iii) Calculate the mass of VOC recovered (M_r) each calendar month for each affected facility by the following equation: M_r=L_r D_r

(iv) Calculate the volume weighted average mass of VOC per volume of applied coating solids emitted after the control device during a calendar month by the following equation:

$$N = \frac{M_o + M_d - M_r}{L_s T}$$

(v) If the volume weighted average mass of VOC per volume of applied solids emitted after the control device (N) calculated on a calendar month basis is less than or equal to the applicable emission limit specified in § 60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purposes of this subpart.

[45 FR 85415, Dec. 24, 1980, as amended at 59 FR 51387, Oct. 11, 1994; 65 FR 61760, Oct. 17, 2000]

§ 60.394 Monitoring of emissions and operations.

The owner or operator of an affected facility which uses an incinerator to

comply with the emission limits specified under § 60.392 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below:

(a) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(b) Each temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±5 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(c) Each temperature measurement device shall be equipped with a recording device so that a permanent record is produced.

§ 60.395 Reporting and recordkeeping requirements.

(a) Each owner or operator of an affected facility shall include the data outlined in paragraphs (a)(1) and (2) in the initial compliance report required by § 60.8.

(1) The owner or operator shall report the volume weighted average mass of VOC per volume of applied coating solids for each affected facility.

(2) Where compliance is achieved through the use of incineration, the owner or operator shall include the following additional data in the control device initial performance test requried by § 60.8(a) or subsequent performance tests at which destruction efficiency is determined: the combustion temperature (or the gas temperature upstream and downstream of the catalyst bed), the total mass of VOC per volume of applied coating solids before and after the incinerator, capture efficiency, the destruction efficiency of the incinerator used to attain compliance with the applicable emission limit specified in § 60.392 and a description of the method used to establish the fraction of VOC captured and sent to the control device.

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under § 60.392. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually. Where compliance is achieved through the use of a capture system and control device, the volume-weighted average after the control device should be reported.

(c) Where compliance with § 60.392 is achieved through the use of incineration, the owner or operator shall continuously record the incinerator combustion temperature during coating operations for thermal incineration or the gas temperature upstream and downstream of the incinerator catalyst bed during coating operations for catalytic incineration. The owner or operator shall submit a written report at the frequency specified in § 60.7(c) and as defined below.

(1) For thermal incinerators, every three-hour period shall be reported during which the average temperature measured is more than 28 °C less than the average temperature during the most recent control device performance test at which the destruction efficiency was determined as specified under § 60.393.

(2) For catalytic incinerators, every three-hour period shall be reported during which the average temperature immediately before the catalyst bed, when the coating system is operational, is more than 28 °C less than the average temperature immediately before the catalyst bed during the most recent control device performance test at which destruction efficiency was determined as specified under § 60.393. In addition, every three-hour period shall be reported each quarter during which the average temperature difference across the catalyst bed when the coating system is operational is less than 80 percent of the average temperature difference of the device during the

most recent control device performance test at which destruction efficiency was determined as specified under § 60.393.

(3) For thermal and catalytic incinerators, if no such periods occur, the owner or operator shall submit a negative report.

(d) The owner or operator shall notify the Administrator 30 days in advance of any test by Method 25.

[45 FR 85415, Dec. 24, 1980, as amended at 55 FR 51383, Dec. 13, 1990; 65 FR 61760, Oct. 17, 2000]

§ 60.396 Reference methods and procedures.

(a) The reference methods in appendix A to this part, except as provided in § 60.8 shall be used to conduct performance tests.

(1) Method 24 or an equivalent or alternative method approved by the Administrator shall be used for the determination of the data used in the calculation of the VOC content of the coatings used for each affected facility. Manufacturers' formulation data is approved by the Administrator as an alternative method to Method 24. In the event of dispute, Method 24 shall be the referee method.

(2) Method 25 or an equivalent or alternative method approved by the Administrator shall be used for the determination of the VOC concentration in the effluent gas entering and leaving the emission control device for each stack equipped with an emission control device and in the effluent gas leaving each stack not equipped with a control device.

(3) The following methods shall be used to determine the volumetric flow rate in the effluent gas in a stack:

(i) Method 1 for sample and velocity traverses,

(ii) Method 2 for velocity and volumetric flow rate,

(iii) Method 3 for gas analysis, and

(iv) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-liter sample taken in a 1-liter container.

(c) For Method 25, the sampling time for each of three runs must be at least one hour. The minimum sample volume must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator. The Administrator will approve the sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

[45 FR 85415, Dec. 24, 1980, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.397 Modifications.

The following physical or operational changes are not, by themselves, considered modifications of existing facilities:

(a) Changes as a result of model year changeovers or switches to larger cars.

(b) Changes in the application of the coatings to increase coating film thickness.

§ 60.398 Innovative technology waivers.

(a) *General Motors Corporation, Wentzville, Missouri, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at General Motors Corporation automobile assembly plant located in Wentzville, Missouri, shall comply with the following conditions:

(i) The General Motors Corporation shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Wentzville assembly plant.

(ii) Commencing on February 4, 1983, and continuing to December 31, 1986, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980) is demonstrated to the Administrator's satisfaction the General Motors Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Wentzville, Missouri, assembly plant, to either:

(A) 1.9 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (a)(1)(ii) of this section, and continuing thereafter, emissions of VOC from each topcoat operations shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (Dec. 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (a)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region VII, 324 East 11th Street, Kansas City, MO 64106, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (Dec. 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for General Motors Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the General Motors Corporation to enforcement under section 113 (b) and (c), 42 U.S.C. 7412 (b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(b) *General Motors Corporation, Detroit, Michigan, Automobile Assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at General Motors Corporation's automobile assembly plant located in Detroit, MI, shall comply with the following conditions:

(i) The General Motors Corporation shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Detroit assembly plant.

(ii) Commencing on February 4, 1983, and continuing to December 31, 1986, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980), is demonstrated to the Administrator's satisfaction, the General Motors Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Detroit, MI, assembly plant, to either:

(A) 1.9 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (b)(ii) of this section, and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (December 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (b)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (Dec. 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for General Motors Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the General Motors Corporation to enforcement under section 113 (b) and (c), 42 U.S.C. 7412 (b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(c) *General Motors Corporation, Orion Township, MI, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at General Motors Corporation automobile assembly plant located in Orion Township, MI, shall comply with the following conditions:

(i) The General Motors Corporation shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Orion Township assembly plant.

(ii) Commencing on February 4, 1983, and continuing to December 31, 1986, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980) is demonstrated to the Administrator's satisfaction, the General Motors Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Orion Township, MI, assembly plant, to either:

(A) 1.9 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (c)(l)(ii) of this section and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (Dec. 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (c)(l) (ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (December 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for General Motors Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the General Motors Corporation to enforcement under section 113 (b) and (c), 42 U.S.C. 7412 (b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(d) *Honda of America Manufacturing, Incorporated (Honda), Marysville, Ohio, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Honda's automobile assembly plant located in Marysville, OH, shall comply with the following conditions:

(i) Honda shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Marysville assembly plant.

(ii) Commencing on February 4, 1983, and continuing for 4 years or to December 31, 1986, whichever is sooner, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980) is demonstrated to the Administrator's satisfaction, Honda shall limit the discharge of VOC emissions to the

atmosphere from each topcoat operation at Marysville, OH, assembly plant, to either:

(A) 3.1 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (d)(1)(ii) of this section and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (December 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (d)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (Dec. 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for Honda to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject Honda to enforcement under section 113(b) and (c), 42 U.S.C. 7412(b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(e) *Nissan Motor Manufacturing Corporation, U.S.A. (Nissan), Smyrna, TN, light-duty truck assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Nissan's light-duty truck assembly plant located in Smyrna, Tennessee, shall comply with the following conditions:

(i) Nissan shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Smyrna assembly plant.

(ii) Commencing on February 4, 1983, and continuing for 4 years or to December 31, 1986, whichever is sooner, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980), is demonstrated to the Administrator's satisfaction, Nissan shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Smyrna, TN, assembly plant, to either:

(A) 2.3 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (e)(1)(ii) of this section and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (Dec. 24, 1980).

Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (e)(1)(ii)(A) of this section.

(f) *Chrysler Corporation, Sterling Heights, MI, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Chrysler Corporation's automobile assembly plant located in Sterling Heights, MI, shall comply with the following conditions:

(i) The Chrysler Corporation shall obtain the necessary permits as required

under Parts C and D of the Clean Air Act, as amended August 1977, to operate the Sterling Heights assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart is demonstrated to the Administrator's satisfaction, whichever is sooner, the Chrysler Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Sterling Heights, MI assembly plant, to either:

(A) 1.7 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (f)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (f)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of § 60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Chrysler Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the Chrysler Corporation to enforcement under sections 113 (b) and (c) of the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Michigan from imposing upon the Chrysler Corporation any emission reduction requirement at Chrysler's Sterling Heights automobile assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standard for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this automobile assembly plant.

(g) *Ford Motor Company, Hapeville, GA, automotive assemply plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Ford Motor Company's automobile assembly plant located in Hapeville, GA, shall comply with the following conditions:

(i) The Ford Motor Company shall obtain the necessary permits as required under parts C and D of the Clean Air Act, as amended August 1977, to operate the Hapeville assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart is demonstrated to the Administrator's satisfaction, whichever is sooner, the Ford

Motor Company shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Hapeville, GA, assembly plant, to either:

(A) 2.6 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (g)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (g)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region IV, 345 Courtland Street, NE., Atlanta, GA 30365, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of § 60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Ford Motor Company to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the Ford Motor Company to enforcement under section 113 (b) and (c) and the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Georgia from imposing upon the Ford Motor Corporation any emission reduction requirement at Ford's Hapeville automobile assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standard for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this automobile assembly plant.

(h) *Ford Motor Company, St. Paul, MN, light-duty truck assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Ford Motor Company's automobile assembly plant located in St. Paul, MN, shall comply with the following conditions:

(i) The Ford Motor Company shall obtain the necessary permits as required under parts C and D of the Clean Air Act, as amended August 1977, to operate the St. Paul assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart, is demonstrated to the Administrator's satisfaction, whichever is sooner, the Ford Motor Company shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the St. Paul, MN, assembly plant, to either:

(A) 2.0 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (h)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (h)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of § 60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Ford Motor Company to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this wavier shall subject the Ford Motor Company to enforcement under section 113 (b) and (c) of the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Minnesota from imposing upon the Ford Motor Corporation any emission reduction requirements at Ford's St. Paul light-duty truck assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standard for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this light-duty truck assembly plant.

(i) *Ford Motor Company, Hazelwood, MO, passenger van assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Ford Motor Company's passenger van assembly plant located in Hazelwood, MO, shall comply with the following conditions:

(i) The Ford Motor Company shall obtain the necessary permits as required under parts C and D of the Clean Air Act, as amended August 1977, to operate the Hazelwood assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart is demonstrated to the Administrator's satisfaction, whichever is sooner, the Ford Motor Company shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Hazelwood, MO, assembly plant, to either:

(A) 2.5 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (i)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings

when necessary to demonstrate compliance with the emission limits specified under paragraph (i)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region VII, 726 Minnesota Avenue, Kansas City, KS 61101, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of § 60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Ford Motor Company to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the Ford Motor Company to enforcement under section 113 (b) and (c) of the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Missouri from imposing upon the Ford Motor Corporation any emission reduction at Ford's Hazelwood passenger van assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standards for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this passenger van assembly plant.

[48 FR 5454, Feb. 4, 1983, as amended at 50 FR 36834, Sept. 9, 1985]

Subpart NN—Standards of Performance for Phosphate Rock Plants

SOURCE: 47 FR 16589, Apr. 16, 1982, unless otherwise noted.

§ 60.400 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities used in phosphate rock plants which have a maximum plant production capacity greater than 3.6 megagrams per hour (4 tons/hr): dryers, calciners, grinders, and ground rock handling and storage facilities, except those facilities producing or preparing phosphate rock solely for consumption in elemental phosphorus production.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after September 21, 1979, is subject to the requirements of this part.

§ 60.401 Definitions.

(a) *Phosphate rock plant* means any plant which produces or prepares phosphate rock product by any or all of the following processes: Mining, beneficiation, crushing, screening, cleaning, drying, calcining, and grinding.

(b) *Phosphate rock feed* means all material entering the process unit, including moisture and extraneous material as well as the following ore minerals: Fluorapatite, hydroxylapatite, chlorapatite, and carbonateapatite.

(c) *Dryer* means a unit in which the moisture content of phosphate rock is reduced by contact with a heated gas stream.

(d) *Calciner* means a unit in which the moisture and organic matter of phosphate rock is reduced within a combustion chamber.

(e) *Grinder* means a unit which is used to pulverize dry phosphate rock to the final product size used in the manufacture of phosphate fertilizer and does not include crushing devices used in mining.

(f) *Ground phosphate rock handling and storage system* means a system which is used for the conveyance and storage of ground phosphate rock from grinders at phosphate rock plants.

(g) *Beneficiation* means the process of washing the rock to remove impurities or to separate size fractions.

[47 FR 16589, Apr. 16, 1982, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.402 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any phosphate rock dryer any gases which:

(i) Contain particulate matter in excess of 0.030 kilogram per megagram of phosphate rock feed (0.06 lb/ton), or

(ii) Exhibit greater than 10-percent opacity.

(2) From any phosphate rock calciner processing unbeneficiated rock or blends of beneficiated and unbeneficiated rock, any gases which:

(i) Contain particulate matter in excess of 0.12 kilogram per megagram of phosphate rock feed (0.23 lb/ton), or

(ii) Exhibit greater than 10-percent opacity.

(3) From any phosphate rock calciner processing beneficiated rock any gases which:

(i) Contain particulate matter in excess of 0.055 kilogram per megagram of phosphate rock feed (0.11 lb/ton), or

(ii) Exhibit greater than 10-percent opacity.

(4) From any phosphate rock grinder any gases which:

(i) Contain particulate matter in excess of 0.006 kilogram per megagram of phosphate rock feed (0.012 lb/ton), or

(ii) Exhibit greater than zero-percent opacity.

(5) From any ground phosphate rock handling and storage system any gases which exhibit greater than zero-percent opacity.

[47 FR 16589, Apr. 16, 1982, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.403 Monitoring of emissions and operations.

(a) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a continuous monitoring system, except as provided in paragraphs (b) and (c) of this section, to monitor and record the opacity of the gases discharged into the atmosphere from any phosphate rock dryer, calciner, or grinder. The span of this system shall be set at 40-percent opacity.

(b) For ground phosphate rock storage and handling systems, continuous monitoring systems for measuring opacity are not required.

(c) The owner or operator of any affected phosphate rock facility using a wet scrubbing emission control device shall not be subject to the requirements in paragraph (a) of this section, but shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(1) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water) gauge pressure.

(2) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ±5 percent of design scrubbing liquid supply pressure.

(d) For the purpose of conducting a performance test under § 60.8, the owner or operator of any phosphate rock plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a device for measuring the phosphate rock feed to any affected dryer, calciner, or grinder. The measuring device used must be accurate to within ±5 percent of the mass rate over its operating range.

(e) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as all 6-minute periods during which the average opacity of the plume from any phosphate rock dryer, calciner, or grinder subject to paragraph (a) of this section exceeds the applicable opacity limit.

(f) Any owner or operator subject to the requirements under paragraph (c) of this section shall report on a frequency specified in § 60.7(c) all measurement results that are less than 90 percent of the average levels maintained during the most recent performance test conducted under § 60.8 in

which the affected facility demonstrated compliance with the standard under § 60.402.

[47 FR 16589, Apr. 16, 1982, as amended at 64 FR 7466, Feb. 12, 1999]

§ 60.404 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.402 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/(P\ K)$$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton) of phosphate rock feed.

c_s=concentration of particulate matter, g/dscm (g/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=phosphate rock feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The device of § 60.403(d) shall be used to determine the phosphate rock feed rate (P) for each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) To comply with § 60.403(f), if applicable, the owner or operator shall use the monitoring devices in § 60.403(c) (1) and (2) to determine the average pressure loss of the gas stream through the scrubber and the average scrubbing supply pressure during the particulate matter runs.

[54 FR 6676, Feb. 14, 1989; 54 FR 21344, May 17, 1989]

Subpart PP—Standards of Performance for Ammonium Sulfate Manufacture

SOURCE: 45 FR 74850, Nov. 12, 1980, unless otherwise noted.

§ 60.420 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each ammonium sulfate dryer within an ammonium sulfate manufacturing plant in the caprolactam by-product, synthetic, and coke oven by-product sectors of the ammonium sulfate industry.

(b) Any facility under paragraph (a) of this section that commences construction or modification after February 4, 1980, is subject to the requirements of this subpart.

§ 60.421 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A.

Ammonium sulfate dryer means a unit or vessel into which ammonium sulfate is charged for the purpose of reducing the moisture content of the product using a heated gas stream. The unit includes foundations, superstructure, material charger systems, exhaust systems, and integral control systems and instrumentation.

Ammonium sulfate feed material streams means the sulfuric acid feed stream to the reactor/crystallizer for synthetic and coke oven by-product ammonium sulfate manufacturing plants; and means the total or combined feed streams (the oximation ammonium sulfate stream and the rearrangement reaction ammonium sulfate stream) to the crystallizer stage, prior to any recycle streams.

Ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate.

Caprolactam by-product ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate as a by-product from process streams generated during caprolactam manufacture.

Coke oven by-product ammonium sulfate manufacturing plant means any

plant which produces ammonium sulfate by reacting sulfuric acid with ammonia recovered as a by-product from the manufacture of coke.

Synthetic ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate by direct combination of ammonia and sulfuric acid.

§ 60.422 Standards for particulate matter.

On or after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of an ammonium sulfate dryer subject to the provisions of this subpart shall cause to be discharged into the atmosphere, from any ammonium sulfate dryer, particulate matter at an emission rate exceeding 0.15 kilogram of particulate per megagram of ammonium sulfate produced (0.30 pound of particulate per ton of ammonium sulfate produced) and exhaust gases with greater than 15 percent opacity.

§ 60.423 Monitoring of operations.

(a) The owner or operator of any ammonium sulfate manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate flow monitoring devices which can be used to determine the mass flow of ammonium sulfate feed material streams to the process. The flow monitoring device shall have an accuracy of ±5 percent over its range. However, if the plant uses weigh scales of the same accuracy to directly measure production rate of ammonium sulfate, the use of flow monitoring devices is not required.

(b) The owner or operator of any ammonium sulfate manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the emission control system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

§ 60.424 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.422 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/(PK)$$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton) of ammonium sulfate produced.

c_s=concentration of particulate matter, g/dscm (g/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=production rate of ammonium sulfate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf).

(3) Direct measurement using product weigh scales, or the result of computations using a material balance, shall be used to determine the rate (P) of the ammonium sulfate production. If production rate is determined by material balance, the following equations shall be used:

(i) For synthetic and coke oven by-product ammonium sulfate plants:

$$P=ABCK_{1}/_{4}$$

where:

A=sulfuric aid flow rate to the reactor/crystallizer averaged over the time-period taken to conduct the run, liter/min.

B=acid density (a function of acid strength and temperature), g/cc.

C=acid strength, decimal fraction.

$K_{1}/_{4}$=conversion factor, 0.0808 (Mg-min-cc)/(g-hr-liter) [0.0891 (ton-min-cc)/(g-hr-liter)].

(ii) For caprolactam by-product ammonium sulfate plants:

$$P=DEFK''$$

where:

D=total combined feed stream flow rate to the ammonium crystallizer before the point where any recycle streams enter

the stream averaged over the time-period taken to conduct the test run, liter/min.

E=density of the process stream solution, g/liter.

F=percent mass of ammonium sulfate in the process solution, decimal fraction.

K″=conversion factor, 6.0×10^{-5} (Mg-min)/(g-hr) [6.614×10^{-5} (ton-min)/(g-hr)].

(4) Method 9 and the procedures in § 60.11 shall be used to determine the opacity.

[54 FR 6676, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart QQ—Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing

SOURCE: 47 FR 50649, Nov. 8, 1982, unless otherwise noted.

§ 60.430 Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which the provisions of this subpart apply is each publication rotogravure printing press.

(b) The provisions of this subpart do not apply to proof presses.

(c) Any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after October 28, 1980 is subject to the requirements of this subpart.

§ 60.431 Definitions and notations.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

Automatic temperature compensator means a device that continuously senses the temperature of fluid flowing through a metering device and automatically adjusts the registration of the measured volume to the corrected equivalent volume at a base temperature.

Base temperature means an arbitrary reference temperature for determining liquid densities or adjusting the measured volume of a liquid quantity.

Density means the mass of a unit volume of liquid, expressed as grams per cubic centimeter, kilograms per liter, or pounds per gallon, at a specified temperature.

Gravure cylinder means a printing cylinder with an intaglio image consisting of minute cells or indentations specially engraved or etched into the cylinder's surface to hold ink when continuously revolved through a fountain of ink.

Performance averaging period means 30 calendar days, one calendar month, or four consecutive weeks as specified in sections of this subpart.

Proof press means any device used only to check the quality of the image formation of newly engraved or etched gravure cylinders and prints only nonsaleable items.

Publication rotogravure printing press means any number of rotogravure printing units capable of printing simultaneously on the same continuous web or substrate and includes any associated device for continuously cutting and folding the printed web, where the following saleable paper products are printed:

Catalogues, including mail order and premium,

Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

Magazines,

Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

Periodicals, and

Telephone and other directories, including business reference services.

Raw ink means all purchased ink.

Related coatings means all non-ink purchased liquids and liquid-solid mixtures containing VOC solvent, usually referred to as extenders or varnishes, that are used at publication rotogravure printing presses.

Rotogravure printing unit means any device designed to print one color ink on one side of a continuous web or substrate using a gravure cylinder.

Solvent-borne ink systems means ink and related coating mixtures whose

volatile portion consists essentially of VOC solvent with not more than five weight percent water, as applied to the gravure cylinder.

Solvent recovery system means an air pollution control system by which VOC solvent vapors in air or other gases are captured and directed through a condenser(s) or a vessel(s) containing beds of activated carbon or other adsorbents. For the condensation method, the solvent is recovered directly from the condenser. For the adsorption method, the vapors are adsorbed, then desorbed by steam or other media, and finally condensed and recovered.

VOC means volatile organic compound.

VOC solvent means an organic liquid or liquid mixture consisting of VOC components.

Waterborne ink systems means ink and related coating mixtures whose volatile portion consists of a mixture of VOC solvent and more than five weight percent water, as applied to the gravure cylinder.

(b) Symbols used in this subpart are defined as follows:

D_B=the density at the base temperature of VOC solvent used or recovered during one performance averaging period.

D_{ci}=the density of each color of raw ink and each related coating (i) used at the subject facility (or facilities), at the coating temperature when the volume of coating used is measured.

D_{di}=the density of each VOC solvent (i) added to the ink for dilution at the subject facility (or facilities), at the solvent temperature when the volume of solvent used is measured.

D_{gi}=the density of each VOC solvent (i) used as a cleaning agent at the subject facility (or facilities), at the solvent temperature when the volume of cleaning solvent used is measured.

D_{hi}=the density of each quantity of water (i) added at the subject facility (or facilities) for dilution of waterborne ink systems at the water temperature when the volume of dilution water used is measured.

D_{mi}=the density of each quantity of VOC solvent and miscellaneous solvent-borne waste inks and waste VOC solvents (i) recovered from the subject facility (or facilities), at the solvent temperature when the volume of solvent recovered is measured.

D_{oi}=the density of the VOC solvent contained in each raw ink and related coating (i) used at the subject facility (or facilities), at the coating temperature when the volume of coating used is measured.

D_{wi}=the density of the water contained in each waterborne raw ink and related coating (i) used at the subject facility (or facilities), at the coating temperature when the volume of coating used is measured.

L_{ci}=the measured liquid volume of each color of raw ink and each related coating (i) used at the facility of a corresponding VOC content, V_{oi} or $W_{oi,}$ with a VOC density, $D_{oi,}$ and a coating density, D_{ci}.

L_{di}=the measured liquid volume of each VOC solvent (i) with corresponding density, $D_{di,}$ added to dilute the ink used at the subject facility (or facilities)

M_{ci}=the mass, determined by direct weighing, of each color of raw ink and each related coating (i) used at the subject facility (or facilities).

M_d=the mass, determined by direct weighing, of VOC solvent added to dilute the ink used at the subject facility (or facilities) during one performance averaging period.

M_g=the mass, determined by direct weighing, of VOC solvent used as a cleaning agent at the subject facility (or facilities) during one performance averaging period.

M_h=the mass, determined by direct weighing, of water added for dilution with waterborne ink systems used at the subject facility (or facilities) during one performance averaging period.

M_m=the mass, determined by direct weighing, of VOC solvent and miscellaneous solvent-borne waste inks and waste VOC solvents recovered from the subject facility (or facilities) during one performance averaging period.

M_o=the total mass of VOC solvent contained in the raw inks and related coatings used at the subject facility (or facilities) during one performance averaging period.

M_r=the total mass of VOC solvent recovered from the subject facility (or facilities) during one performance averaging period.

M_t=the total mass of VOC solvent used at the subject facility (or facilities) during one performance averaging period.

M_v=the total mass of water used with waterborne ink systems at the subject facility (or facilities) during one performance averaging period.

M_w=the total mass of water contained in the waterborne raw inks and related coatings used at the subject facility (or facilities) during one performance averaging period.

P=the average VOC emission percentage for the subject facility (or facilities) for one performance averaging period.

V_{oi}=the liquid VOC content, expressed as a volume fraction of VOC volume per total volume of coating, of each color of raw

ink and related coating (i) used at the subject facility (or facilities).

V_{wi}=the water content, expressed as a volume fraction of water volume per total volume of coating, of each color of waterborne raw ink and related coating (i) used at the subject facility (or facilities).

W_{oi}=the VOC content, expressed as a weight fraction of mass of VOC per total mass of coating, of each color of raw ink and related coating (i) used at the subject facility (or facilities).

W_{wi}=the water content, expressed as a weight fraction of mass of water per total mass of coating, of each color of waterborne raw ink and related coating (i) used at the subject facility (or facilities).

(c) The following subscripts are used in this subpart with the above symbols to denote the applicable facility:

a=affected facility.

b=both affected and existing facilities controlled in common by the same air pollution control equipment.

e=existing facility.

f=all affected and existing facilities located within the same plant boundary.

[47 FR 50649, Nov. 8, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.432 Standard for volatile organic compounds.

During the period of the performance test required to be conducted by § 60.8 and after the date required for completion of the test, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility VOC equal to more than 16 percent of the total mass of VOC solvent and water used at that facility during any one performance averaging period. The water used includes only that water contained in the waterborne raw inks and related coatings and the water added for dilution with waterborne ink systems.

§ 60.433 Performance test and compliance provisions.

(a) The owner or operator of any affected facility (or facilities) shall conduct performance tests in accordance with § 60.8, under the following conditions:

(1) The performance averaging period for each test is 30 consecutive calendar days and not an average of three separate runs as prescribed under § 60.8(f).

(2) Except as provided under paragraphs (f) and (g) of this section, if affected facilities routinely share the same raw ink storage/handling system with existing facilities, then temporary measurement procedures for segregating the raw inks, related coatings, VOC solvent, and water used at the affected facilities must be employed during the test. For this case, an overall emission percentage for the combined facilities as well as for only the affected facilities must be calculated during the test.

(3) For the purpose of measuring bulk storage tank quantities of each color of raw ink and each related coating used, the owner or operator of any affected facility shall install, calibrate, maintain, and continuously operate during the test one or more:

(i) Non-resettable totalizer metering device(s) for indicating the cumulative liquid volumes used at each affected facility; or

(ii) Segregated storage tanks for each affected facility to allow determination of the liquid quantities used by measuring devices other than the press meters required under item (i) of this article; or

(iii) Storage tanks to serve more than one facility with the liquid quantities used determined by measuring devices other than press meters, if facilities are combined as decribed under paragraph (d), (f), or (g) of this section.

(4) The owner or operator may choose to install an automatic temperature compensator with any liquid metering device used to measure the raw inks, related coatings, water, or VOC solvent used, or VOC solvent recovered.

(5) Records of the measured amounts used at the affected facility and the liquid temperature at which the amounts were measured are maintained for each shipment of all purchased material on at least a weekly basis for:

(i) The raw inks and related coatings used;

(ii) The VOC and water content of each raw ink and related coating used as determined according to § 60.435;

(iii) The VOC solvent and water added to the inks used;

(iv) The VOC solvent used as a cleaning agent; and

(v) The VOC solvent recovered.

(6) The density variations with temperature of the raw inks, related coatings, VOC solvents used, and VOC solvent recovered are determined by the methods stipulated in § 60.435(d).

(7) The calculated emission percentage may be reported as rounded-off to the nearest whole number.

(8) Printing press startups and shutdowns are not included in the exemption provisions under § 60.8(c). Frequent periods of press startups and shutdowns are normal operations and constitute representative conditions for the purpose of a performance test.

(b) If an affected facility uses waterborne ink systems or a combination of waterborne and solvent-borne ink systems with a solvent recovery system, compliance is determined by the following procedures, except as provided in paragraphs (d), (e), (f), and (g) of this section:

(1) The mass of VOC in the solvent-borne and waterborne raw inks and related coatings used is determined by the following equation:

$$(M_o)_a = \sum_{i=1}^{k} (M_{ci})_a (W_{oi})_a + \sum_{i=1}^{m} (L_{ci})_a (D_{ci})_a (W_{oi})_a + \sum_{i=1}^{n} (L_{ci})_a (V_{oi})_a (D_{oi})_a$$

where:

k is the total number of raw inks and related coatings measured as used in direct mass quantities with different amounts of VOC content.

m is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different densities.

n is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different VOC solvent densities.

(2) The total mass of VOC used is determined by the following equation:

$$(M_t)_a = (M_o)_a + \sum_{i=1}^{m} (L_{di})_a (D_{di})_a + (M_d)_a + \sum_{i=1}^{n} (L_{gi})_a (D_{gi})_a + (M_g)_a$$

where ''m'' and ''n'' are the respective total numbers of VOC dilution and cleaning solvents measured as used by volume with different densities.

(3) The mass of water in the waterborne raw inks and related coatings used is determined by the following equation:

$$(M_w)_a = \sum_{i=1}^{k} (M_{ci})_a (W_{wi})_a + \sum_{i=1}^{m} (L_{ci})_a (D_{ci})_a (W_{wi})_a + \sum_{i=1}^{n} (L_{ci})_a (V_{wi})_a (D_{wi})_a$$

where:

k is the total number of raw inks and related coatings measured as used in direct mass quantities with different amounts of water content.

m is the total number of raw inks and related coatings measured as used by volume with different amounts of water content or different densities.

n is the total number of raw inks and related coatings measured as used by volume with different amounts of water content or different water densities.

(4) The total mass of water used is determined by the following equation:

$$(M_v)_a = (M_w)_a + (M_h)_a + \sum_{i=1}^{m} (L_{hi})_a (D_{hi})_a$$

where ''m'' is the total number of water dilution additions measured as used by volume with different densities.

(5) The total mass of VOC solvent recovered is determined by the following equation:

$$(M_r)_a = (M_m)_a + \sum_{i=1}^{k} (L_{mi})_a (D_{mi})_a$$

where ''k'' if the total number of VOC solvents, miscellaneous solvent-borne waste inks, and waste VOC solvents measured as recovered by volume with different densities.

(6) The average VOC emission percentage for the affected facility is determined by the following equation:

$$P_a = \left[\frac{(M_t)_a - (M_r)_a}{(M_t)_a + (M_v)_a} \right] \times 100$$

(c) If an affected facility controlled by a solvent recovery system uses only solvent-borne ink systems, the owner or operator may choose to determine compliance on a direct mass or a density-corrected liquid volume basis. Except as provided in paragraphs (d), (e), (f), and (g) of this section, compliance is determined as follows:

(1) On a direct mass basis, compliance is determined according to paragraph (b) of this section, except that the water term, M_v, does not apply.

(2) On a density-corrected liquid volume basis, compliance is determined by the following procedures:

(i) A base temperature corresponding to that for the largest individual amount of VOC solvent used or recovered from the affected facility, or other reference temperature, is chosen by the owner or operator.

(ii) The corrected liquid volume of VOC in the raw inks and related coatings used is determined by the following equation:

$$(L_o)_a = \sum_{i=1}^{k} \frac{(M_{ci})_a (W_{oi})_a}{D_B} + \sum_{i=1}^{m} \frac{(L_{ci})_a (D_{ci})_a (W_{oi})_a}{D_B} + \sum_{i=1}^{n} \frac{(L_{ci})_a (V_{oi})_a (D_{oi})_a}{D_B}$$

where:

k is the total number of raw inks and related coatings measured as used in direct mass quantities with different amounts of VOC content.

m is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different densities.

n is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different VOC solvent densities.

(iii) The total corrected liquid volume of VOC used is determined by the following equation:

$$(L_t)_a = (L_o)_a + \sum_{i=1}^{m} \frac{(L_{di})_a (D_{di})_a}{D_B} + \frac{(M_d)_a}{D_B} + \sum_{i=1}^{n} \frac{(L_{gi})_a (D_{gi})_a}{D_B} + \frac{(M_g)_a}{D_B}$$

where ''m'' and ''n'' are the respective total numbers of VOC dilution and cleaning solvents measured as used by volume with different densities.

(iv) The total corrected liquid volume of VOC solvent recovered is determined by the following equation:

$$P_e = \left[\frac{(L_t)_e - (L_r)_e}{(L_t)_e} \right] \times 100$$

where ''k'' is the total number of VOC solvents, miscellaneous solvent-borne waste inks, and waste VOC solvents measured as recovered by volume with different densities.

(v) The average VOC emission percentage for the affected facility is determined by the following equation:

$$P_a = \left[\frac{(L_t)_a - (L_r)_a}{(L_t)_a} \right] \times 100$$

(d) If two or more affected facilities are controlled by the same solvent recovery system, compliance is determined by the procedures specified in paragraph (b) or (c) of this section, whichever applies, except that $(L_t)_a$ and $(L_r)_a$, $(M_t)_a$, $(M_r)_a$, and $(M_v)_a$, are the collective amounts of VOC solvent and water corresponding to all the affected facilities controlled by that solvent recovery system. The average VOC emission percentage for each of the affected facilities controlled by that same solvent recovery system is assumed to be equal.

(e) Except as provided under paragraph (f) of this section, if an existing facility (or facilities) and an affected facility (or facilities) are controlled in common by the same solvent recovery system, the owner or operator shall determine compliance by conducting a separate emission test on the existing facility (or facilities) and then conducting a performance test on the combined facilities as follows:

(1) Before the initial startup of the affected facility (or facilities) and at any other time as requested by the Administrator, the owner or operator shall conduct emission test(s) on the existing facility (or facilities) controlled by the subject solvent recovery system. The solvent recovery system must handle VOC emissions from only the subject existing facility (or facilities), not from affected facilities, during the emission test.

(2) During the emission test, the affected facilities are subject to the standard stated in § 60.432.

(3) The emission test is conducted over a 30 consecutive calendar day averaging period according to the conditions stipulated in paragraphs (a)(1) through (a)(5) of this section, except that the conditions pertain to only existing facilities instead of affected facilities.

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

(5) The emission percentage for the existing facility (or facilities) during the emission test is determined by one of the following procedures:

(i) If the existing facility (or facilities) uses a combination of waterborne and solvent-borne ink systems, the average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) or (d) of this section, whichever applies, with the following equation:

$$P_e = \left[\frac{(M_t)_e - (M_r)_e}{(M_t)_e + (M_v)_e}\right] \times 100$$

where the water and VOC solvent amounts pertain to only existing facilities.

(ii) If the existing facility (or facilities) uses only solvent-borne ink systems, the owner or operator may choose to determine the emission percentage either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) or (d) of this section, whichever applies. On a direct mass basis, the average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the average VOC emission percentage is determined by the following equation:

$$P_e = \left[\frac{(L_t)_e - (L_r)_e}{(L_t)_e}\right] \times 100$$

where the VOC solvent amounts pertain to only existing facilities.

(6) The owner or operator of the existing facility (or facilities) shall furnish the Administrator a written report of the results of the emission test.

(7) After completion of the separate emission test on the existing facility (or facilities), the owner or operator shall conduct performance test(s) on the combined facilities with the solvent recovery system handling VOC emissions from both the existing and affected facilities.

(8) During performance test(s), the emission percentage for the existing facility (or facilities), P_e, is assumed to be equal to that determined in the latest emission test. The administrator may request additional emission tests if any physical or operational changes occur to any of the subject existing facilities.

(9) The emission percentage for the affected facility (or facilities) during performance test(s) with both existing and affected facilities connected to the solvent recovery system is determined by one of the following procedures:

(i) If any of the combined facilities uses both waterborne and solvent-borne ink systems, the average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) or (d) of this section, whichever applies, with the following equation:

$$P_a = \left\{\frac{(M_t)_b - (M_r)_b - \left(\frac{P_e}{100}\right)[(M_t)_e + (M_v)_e]}{(M_t)_a + (M_v)_a}\right\} \times 100$$

where $(M_t)_b$ and $(M_r)_b$ are the collective VOC solvent amounts pertaining to all the combined facilities.

(ii) If all of the combined facilities use only solvent-borne ink systems, the owner or operator may choose to determine performance of the affected facility (or facilities) either on a direct mass basis or a density-corrected liquid volume basis according to paragraph

(c) or (d) of this section, whichever applies. On a direct mass basis, the average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the average VOC emission percentage is determined by the following equation:

$$P_a = \left[\frac{(L_t)_b - (L_r)_b - (L_t)_e \left(\frac{P_e}{100} \right)}{(L_t)_a} \right] \times 100$$

where $(L_t)_b$ and $(L_r)_b$ are the collective VOC solvent amounts pertaining to all the combined facilities.

(f) The owner or operator may choose to show compliance of the combined performance of existing and affected facilities controlled in common by the same solvent recovery system. A separate emission test for existing facilities is not required for this option. The combined performance is determined by one of the following procedures:

(1) If any of the combined facilities uses both waterborne and solvent-borne ink systems, the combined average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) or (d) of this section, whichever applies, with the following equation:

$$P_b = \left[\frac{(M_t)_b - (M_r)_b}{(M_t)_b + (M_v)_b} \right] \times 100$$

(2) If all of the combined facilities use only solvent-borne ink systems, the owner or operator may choose to determine performance either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) or (d) of this section, whichever applies. On a direct mass basis, the average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the average VOC emission percentage is determined by the following equation:

$$P_a = \left[\frac{(L_t)_a - (L_r)_a}{(L_t)_a} \right] \times 100$$

(g) If all existing and affected facilities located within the same plant boundary use waterborne ink systems or solvent-borne ink systems with solvent recovery systems, the owner or operator may choose to show compliance on a plantwide basis for all the existing and affected facilities together. No separate emission tests on existing facilities and no temporary segregated liquid measurement procedures for affected facilities are required for this option. The plantwide performance is determined by one of the following procedures:

(1) If any of the facilities use waterborne ink systems, the total plant average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) of this section with the following equation:

$$P_a = \left\{ \frac{(M_t)_b - (M_r)_b - \left(\frac{P_e}{100} \right) [(M_t)_e + (M_v)_e]}{(M_t)_a + (M_v)_a} \right\} \times 100$$

Where $(M_t)_f$ and $(M_v)_f$ are the collective VOC solvent and water amounts used at all the subject plant facilities during the performance test.

(2) If all of the plant facilities use only solvent-borne ink systems, the owner or operator may choose to determine performance either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) of this section. On a direct mass basis, the total plant average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the total plant average VOC emission percentage is determined by the following equation:

$$P_f \left[\frac{(L_t)_f - (L_r)_a - (L_r)_e - (L_r)_b}{(L_t)_f} \right] \times 100$$

Where $(L_t)_f$ is the collective VOC solvent amount used at all the subject plant facilities during the performance test.

[47 FR 50649, Nov. 8, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.434 Monitoring of operations and recordkeeping.

(a) After completion of the performance test required under § 60.8, the owner or operator of any affected facility using waterborne ink systems or solvent-borne ink systems with solvent recovery systems shall record the

amount of solvent and water used, solvent recovered, and estimated emission percentage for each performance averaging period and shall maintain these records for 2 years. The emission percentage is estimated as follows:

(1) The performance averaging period for monitoring of proper operation and maintenance is a calendar month or 4 consecutive weeks, at the option of the owner or operator.

(2) If affected facilities share the same raw ink storage/handling system with existing facilities, solvent and water used, solvent recovered, and emission percentages for the combined facilities may be documented. Separate emission percentages for only the affected facilities are not required in this case. The combined emission percentage is compared to the overall average for the existing and affected facilities' emission percentage determined during the most recent performance test.

(3) Except as provided in article (4) of this paragraph, temperatures and liquid densities determined during the most recent performance test are used to calculate corrected volumes and mass quantities.

(4) The owner or operator may choose to measure temperatures for determination of actual liquid densities during each performance averaging period. A different base temperature may be used for each performance averaging period if desired by the owner or operator.

(5) The emission percentage is calculated according to the procedures under § 60.433 (b) through (g), whichever applies, or by a comparable calculation which compares the total solvent recovered to the total solvent used at the affected facility.

§ 60.435 Test methods and procedures.

(a) The owner or operator of any affected facility using solvent-borne ink systems shall determine the VOC content of the raw inks and related coatings used at the affected facility by:

(1) Analysis using Method 24A of routine weekly samples of raw ink and related coatings in each respective storage tank; or

(2) Analysis using Method 24A of samples of each shipment of all purchased raw inks and related coatings; or

(3) Determination of the VOC content from the formulation data supplied by the ink manufacturer with each shipment of raw inks and related coatings used.

(b) The owner or operator of any affected facility using solvent-borne ink systems shall use the results of verification analyses by Method 24A to determine compliance when discrepancies with ink manufacturers' formulation data occur.

(c) The owner or operator of any affected facility using waterborne ink systems shall determine the VOC and water content of raw inks and related coatings used at the affected facility by:

(1) Determination of the VOC and water content from the formulation data supplied by the ink manufacturer with each shipment of purchased raw inks and related coatings used; or

(2) Analysis of samples of each shipment of purchased raw inks and related coatings using a test method approved by the Administrator in accordance with § 60.8(b).

(d) The owner or operator of any affected facility shall determine the density of raw inks, related coatings, and VOC solvents by:

(1) Making a total of three determinations for each liquid sample at specified temperatures using the procedure outlined in ASTM D1475–60, 80, or 90, which is incorporated by reference. It is available from the American Society of Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html*. This incorporation by reference was approved by the Director of the Federal Register on November 8, 1982. This material is incorporated as it exists on the date of approval and a notice of any change in these materials will be published in the FEDERAL REGISTER. The temperature

and density is recorded as the arithmetic average of the three determinations; or

(2) Using literature values, at specified temperatures, acceptable to the Administrator.

(e) If compliance is determined according to § 60.433 (e), (f), or (g), the existing as well as affected facilities are subject to the requirements of paragraphs (a) through (d) of this section.

[47 FR 50649, Nov. 8, 1982, as amended at 65 FR 61761, Oct. 17, 2000; 69 FR 18803, Apr. 9, 2004]

Subpart RR—Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

SOURCE: 48 FR 48375, Oct. 18, 1983, unless otherwise noted.

§ 60.440 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each coating line used in the manufacture of pressure sensitive tape and label materials.

(b) Any affected facility which inputs to the coating process 45 Mg (50 tons) of VOC or less per 12 month period is not subject to the emission limits of § 60.442(a), however, the affected facility is subject to the requirements of all other applicable sections of this subpart. If the amount of VOC input exceeds 45 Mg (50 tons) per 12 month period, the coating line will become subject to § 60.442(a) and all other sections of this subpart.

(c) This subpart applies to any affected facility which begins construction, modification, or reconstruction after December 30, 1980.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.441 Definitions and symbols.

(a) Except as otherwise required by the context, terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Coating applicator means an apparatus used to apply a surface coating to a continuous web.

Coating line means any number or combination of adhesive, release, or precoat coating applicators, flashoff areas, and ovens which coat a continuous web, located between a web unwind station and a web rewind station, to produce pressure sensitive tape and label materials.

Coating solids applied means the solids content of the coated adhesive, release, or precoat as measured by Method 24.

Flashoff area means the portion of a coating line after the coating applicator and usually before the oven entrance.

Fugitive volatile organic compounds means any volatile organic compounds which are emitted from the coating applicator and flashoff areas and are not emitted in the oven.

Hood or enclosure means any device used to capture fugitive volatile organic compounds.

Oven means a chamber which uses heat or irradiation to bake, cure, polymerize, or dry a surface coating.

Precoat means a coating operation in which a coating other than an adhesive or release is applied to a surface during the production of a pressure sensitive tape or label product.

Solvent applied in the coating means all organic solvent contained in the adhesive, release, and precoat formulations that is metered into the coating applicator from the formulation area.

Total enclosure means a structure or building around the coating applicator and flashoff area or the entire coating line for the purpose of confining and totally capturing fugitive VOC emissions.

VOC means volatile organic compound.

(b) All symbols used in this subpart not defined below are given meaning in the Act or in subpart A of this part.

a=the gas stream vents exiting the emission control device.

b=the gas stream vents entering the emission control device.

C_{aj}=the concentration of VOC (carbon equivalent) in each gas stream (j) exiting the emission control device, in parts per million by volume.

C_{bi}=the concentration of VOC (carbon equivalent) in each gas stream (i) entering the emission control device, in parts per million by volume.

C_{fk}=the concentration of VOC (carbon equivalent) in each gas stream (k) emitted directly to the atmosphere, in parts per million by volume.

G=the calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.

M_{ci}=the total mass (kg) of each coating (i) applied during the calendar month as determined from facility records.

M_r=the total mass (kg) of solvent recovered for a calendar month.

Q_{aj}=the volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in dry standard cubic meters per hour.

Q_{bi}=the volumetric flow rate of each effluent gas stream (i) entering the emission control device, in dry standard cubic meters per hour.

Q_{fk}=the volumetric flow rate of each effluent gas stream (k) emitted to the atmosphere, in dry standard cubic meters per hour.

R=the overall VOC emission reduction achieved for a calendar month (in percent).

R_q=the required overall VOC emission reduction (in percent).

W_{oi}=the weight fraction of organics applied of each coating (i) applied during a calendar month as determined from Method 24 or coating manufacturer's formulation data.

W_{si}=the weight fraction of solids applied of each coating (i) applied during a calendar month as determined from Method 24 or coating manufacturer's formulation data.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.442 Standard for volatile organic compounds.

(a) On and after the date on which the performance test required by § 60.8 has been completed each owner or operator subject to this subpart shall:

(1) Cause the discharge into the atmosphere from an affected facility not more than 0.20 kg VOC/kg of coating solids applied as calculated on a weighted average basis for one calendar month; or

(2) Demonstrate for each affected facility;

(i) A 90 percent overall VOC emission reduction as calculated over a calendar month; or

(ii) The percent overall VOC emission reduction specified in § 60.443(b) as calculated over a calendar month.

§ 60.443 Compliance provisions.

(a) To determine compliance with § 60.442 the owner or operator of the affected facility shall calculate a weighted average of the mass of solvent used per mass of coating solids applied for a one calendar month period according to the following procedures:

(1) Determine the weight fraction of organics and the weight fraction of solids of each coating applied by using Reference Method 24 or by the coating manufacturer's formulation data.

(2) Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^{n} W_{oi} M_{ci}}{\sum_{i=1}^{n} W_{si} M_{ci}}$$

(3) For each affected facility where the value of G is less than or equal to 0.20 kg VOC per kg of coating solids applied, the affected facility is in compliance with § 60.442(a)(1).

(b) To determine compliance with § 60.442(a)(2), the owner or operator shall calculate the required overall VOC emission reduction according to the following equation:

$$R_q = \frac{G - 0.20}{G} \times 100$$

If R_q is less than or equal to 90 percent, then the required overall VOC emission reduction is R_q. If R_q is greater than 90 percent, then the required overall VOC emission reduction is 90 percent.

(c) Where compliance with the emission limits specified in § 60.442(a)(2) is achieved through the use of a solvent recovery system, the owner or operator shall determine the overall VOC emission reduction for a one calendar month period by the following equation:

$$R = \sum_{i=1}^{n} \frac{M_r}{W_{oi} M_{ci}} \times 100$$

If the R value is equal to or greater than the R_q value specified in paragraph (b) of this section, then compliance with § 60.442(a)(2) is demonstrated.

(d) Where compliance with the emission limit specified in § 60.442(a)(2) is achieved through the use of a solvent destruction device, the owner or operator shall determine calendar monthly compliance by comparing the monthly required overall VOC emission reduction specified in paragraph (b) of this section to the overall VOC emission reduction demonstrated in the most recent performance test which complied with § 60.442(a)(2). If the monthly required overall VOC emission reduction is less than or equal to the overall VOC reduction of the most recent performance test, the affected facility is in compliance with § 60.442(a)(2).

(e) Where compliance with § 60.442(a)(2) is achieved through the use of a solvent destruction device, the owner or operator shall continuously record the destruction device combustion temperature during coating operations for thermal incineration destruction devices or the gas temperature upstream and downstream of the incinerator catalyst bed during coating operations for catalytic incineration destruction devices. For thermal incineration destruction devices the owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device is more than 28 °C (50 °F) below the average temperature of the device during the most recent performance test complying with § 60.442(a)(2). For catalytic incineration destruction devices, the owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the device during the most recent performance test complying with § 60.442(a)(2), and all 3-hour periods (during actual coating operations) during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test complying with § 60.442(a)(2).

(f) After the initial performance test required for all affected facilities under § 60.8, compliance with the VOC emission limitation and percentage reduction requirements under § 60.442 is based on the average emission reduction for one calendar month. A separate compliance test is completed at the end of each calendar month after the initial performance test, and a new calendar month's average VOC emission reduction is calculated to show compliance with the standard.

(g) If a common emission control device is used to recover or destroy solvent from more than one affected facility, the performance of that control device is assumed to be equal for each of the affected facilities. Compliance with § 60.442(a)(2) is determined by the methods specified in paragraphs (c) and (d) of this section and is performed simultaneously on all affected facilities.

(h) If a common emission control device is used to recover solvent from an existing facility (or facilities) as well as from an affected facility (or facilities), the overall VOC emission reduction for the affected facility (or facilities), for the purpose of compliance, shall be determined by the following procedures:

(1) The owner or operator of the existing facility (or facilities) shall determine the mass of solvent recovered for a calendar month period from the existing facility (or facilities) prior to the connection of the affected facility (or facilities) to the emission control device.

(2) The affected facility (or facilities) shall then be connected to the emission control device.

(3) The owner or operator shall determine the total mass of solvent recovered from both the existing and affected facilities over a calendar month period. The mass of solvent determined in paragraph (h)(1) of this section from the existing facility shall be subtracted from the total mass of recovered solvent to obtain the mass of solvent recovered from the affected facility (or facilities). The overall VOC emission reduction of the affected facility (or facilities) can then be determined as specified in paragraph (c) of this section.

(i) If a common emission control device(s) is used to destruct solvent from an existing facility (or facilities) as

well as from an affected facility (or facilities), the overall VOC emission reduction for the affected facility (or facilities), for the purpose of compliance, shall be determined by the following procedures:

(1) The owner or operator shall operate the emission control device with both the existing and affected facilities connected.

(2) The concentration of VOC (in parts per million by volume) after the common emission control device shall be determined as specified in § 60.444(c). This concentration is used in the calculation of compliance for both the existing and affected facilities.

(3) The volumetric flow out of the common control device attributable to the affected facility (or facilities) shall be calculated by first determining the ratio of the volumetric flow entering the common control device attributable to the affected facility (facilities) to the total volumetric flow entering the common control device from both existing and affected facilities. The multiplication of this ratio by the total volumetric flow out of the common control device yields the flow attributable to the affected facility (facilities). Compliance is determined by the use of the equation specified in § 60.444(c).

(j) Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standard specified at § 60.442(a)(2) is being attained.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.444 Performance test procedures.

(a) The performance test for affected facilities complying with § 60.442 without the use of add-on controls shall be identical to the procedures specified in § 60.443(a).

(b) The performance test for affected facilities controlled by a solvent recovery device shall be conducted as follows:

(1) The performance test shall be a one calendar month test and not the average of three runs as specified in § 60.8(f).

(2) The weighted average mass of VOC per mass of coating solids applied for a one calendar month period shall be determined as specified in § 60.443(a)(1) and (2).

(3) Calculate the required percent overall VOC emission reduction as specified in § 60.443(b).

(4) Inventory VOC usage and VOC recovery for a one calendar month period.

(5) Determine the percent overall VOC emission reduction as specified in § 60.443(c).

(c) The performance test for affected facilities controlled by a solvent destruction device shall be conducted as follows:

(1) The performance of the solvent destruction device shall be determined by averaging the results of three test runs as specified in § 60.8(f).

(2) Determine for each affected facility prior to each test run the weighted average mass of VOC per mass of coating solids applied being used at the facility. The weighted average shall be determined as specified in § 60.443(a). In this application the quantities of W_{oi}, W_{si}, and M_{ci} shall be determined for the time period of each test run and not a calendar month as specified in § 60.441.

(3) Calculate the required percent overall VOC emission reduction as specified in § 60.443(b).

(4) Determine the percent overall VOC emission reduction of the solvent destruction device by the following equation and procedures:

$$R = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{m} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \times 100$$

(i) The owner or operator of the affected facility shall construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.446(b).

(ii) The owner or operator of an affected facility shall construct a temporary total enclosure around the coating line applicator and flashoff area during the performance test for the purpose of capturing fugitive VOC emissions. If a permanent total enclosure exists in the affected facility prior

to the performance test and the Administrator is satisfied that the enclosure is totally capturing fugitive VOC emissions, then no additional total enclosure will be required for the performance test.

(iii) For each affected facility where the value of R is greater than or equal to the value of R_q calculated in § 60.443(b), compliance with § 60.442(a)(2) is demonstrated.

§ 60.445 Monitoring of operations and recordkeeping.

(a) The owner or operator of an affected facility subject to this subpart shall maintain a calendar month record of all coatings used and the results of the reference test method specified in § 60.446(a) or the manufacturer's formulation data used for determining the VOC content of those coatings.

(b) The owner or operator of an affected facility controlled by a solvent recovery device shall maintain a calendar month record of the amount of solvent applied in the coating at each affected facility.

(c) The owner or operator of an affected facility controlled by a solvent recovery device shall install, calibrate, maintain, and operate a monitoring device for indicating the cumulative amount of solvent recovered by the device over a calendar month period. The monitoring device shall be accurate within ±2.0 percent. The owner or operator shall maintain a calendar month record of the amount of solvent recovered by the device.

(d) The owner or operator of an affected facility operating at the conditions specified in § 60.440(b) shall maintain a 12 month record of the amount of solvent applied in the coating at the facility.

(e) The owner or operator of an affected facility controlled by a thermal incineration solvent destruction device shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the temperature of the solvent destruction device's exhaust gases. The monitoring device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(f) The owner or operator of an affected facility controlled by a catalytic incineration solvent destruction device shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed.

(g) The owner or operator of an affected facility controlled by a solvent destruction device which uses a hood or enclosure to capture fugitive VOC emissions shall install, calibrate, maintain, and operate a monitoring device which continuously indicates that the hood or enclosure is operating. No continuous monitor shall be required if the owner or operator can demonstrate that the hood or enclosure system is interlocked with the affected facility's oven recirculation air system.

(h) Records of the measurements required in §§ 60.443 and 60.445 must be retained for at least two years following the date of the measurements.

§ 60.446 Test methods and procedures.

(a) The VOC content per unit of coating solids applied and compliance with § 60.422(a)(1) shall be determined by either Method 24 and the equations specified in § 60.443 or by manufacturers' formulation data. In the event of any inconsistency between a Method 24 test and manufacturers' formulation data, the Method 24 test will govern. The Administrator may require an owner or operator to perform Method 24 tests during such months as he deems appropriate. For Method 24, the coating sample must be a one liter sample taken into a one liter container at a point where the sample will be representative of the coating applied to the web substrate.

(b) Method 25 shall be used to determine the VOC concentration, in parts per million by volume, of each effluent gas stream entering and exiting the solvent destruction device or its equivalent, and each effluent gas stream emitted directly to the atmosphere. Methods 1, 2, 3, and 4 shall be used to determine the sampling location, volumetric flowrate, molecular weight, and moisture of all sampled gas streams. For Method 25, the sampling time for each of three runs must be at least 1 hour. The minimum sampling volume

must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(c) If the owner or operator can demonstrate to the Administrator's satisfaction that testing of representative stacks yields results comparable to those that would be obtained by testing all stacks, the Administrator will approve testing of representative stacks on a case-by-case basis.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.447 Reporting requirements.

(a) For all affected facilities subject to compliance with § 60.442, the performance test data and results from the performance test shall be submitted to the Administrator as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A).

(b) Following the initial performance test, the owner or operator of each affected facility shall submit quarterly reports to the Administrator of exceedances of the VOC emission limits specified in § 60.442. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) The owner or operator of each affected facility shall also submit reports at the frequency specified in § 60.7(c) when the incinerator temperature drops as defined under § 60.443(e). If no such periods occur, the owner or operator shall state this in the report.

(d) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[48 FR 48375, Oct. 18, 1983, as amended at 55 FR 51383, Dec. 13, 1990]

Subpart SS—Standards of Performance for Industrial Surface Coating: Large Appliances

SOURCE: 47 FR 47785, Oct. 27, 1982, unless otherwise noted.

§ 60.450 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each surface coating operation in a large appliance surface coating line.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after December 24, 1980.

§ 60.451 Definitions.

(a) All terms used in this subpart not defined below are given the meaning in the Act or in subpart A of this part.

Applied coating solids means the coating solids that adhere to the surface of the large appliance part being coated.

Coating application station means that portion of the large appliance surface coating operation where a prime coat or a top coat is applied to large appliance parts or products (e.g., dip tank, spray booth, or flow coating unit).

Curing oven means a device that uses heat to dry or cure the coating(s) applied to large appliance parts or products.

Electrodeposition (EDP) means a method of coating application in which the large appliance part or product is submerged in a tank filled with coating material suspended in water and an electrical potential is used to enhance deposition of the material on the part or product.

Flashoff area means the portion of a surface coating line between the coating application station and the curing oven.

Large appliance part means any organic surface-coated metal lid, door, casing, panel, or other interior or exterior metal part or accessory that is assembled to form a large appliance product. Parts subject to in-use temperatures in excess of 250 °F are not included in this definition.

Large appliance product means any organic surface-coated metal range,

oven, microwave oven, refrigerator, freezer, washer, dryer, dishwasher, water heater, or trash compactor manufactured for household, commercial, or recreational use.

Large appliance surface coating line means that portion of a large appliance assembly plant engaged in the application and curing of organic surface coatings on large appliance parts or products.

Organic coating means any coating used in a surface coating operation, including dilution solvents, from which VOC emissions occur during the application or the curing process. For the purpose of this regulation, powder coatings are not included in this definition.

Powder coating means any surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

Spray booth means the structure housing automatic or manual spray application equipment where a coating is applied to large appliance parts or products.

Surface coating operation means the system on a large appliance surface coating line used to apply and dry or cure an organic coating on the surface of large appliance parts or products. The surface coating operation may be a prime coat or a topcoat operation and includes the coating application station(s), flashoff area, and curing oven.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a large appliance part or product to the total amount of coating solids used.

VOC content means the proportion of a coating that is volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of coating solids.

VOC emissions means the mass of volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of applied coating solids, emitted from a surface coating operation.

(b) All symbols used in this subpart not defined below are given the meaning in the Act or subpart A of this part.

C_a=the concentration of VOC's in a gas stream leaving a control device and entering the atmosphere (parts per million by volume, as carbon).

$C_b$the concentration of VOC's in a gas stream entering a control device (parts per million by volume, as carbon).

$C_f$the concentration of VOC's in a gas stream emitted directly to the atmosphere (parts per million by volume, as carbon).

$D_c$density of coating (or input stream), as received (kilograms per liter).

$D_d$density of a VOC-solvent added to coatings (kilograms per liter).

$D_r$density of a VOC-solvent recovered by an emission control device (kilograms per liter).

Ethe VOC destruction efficiency of a control device (fraction).

Fthe proportion of total VOC's emitted by an affected facility that enters a control device (fraction).

Gthe volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of applied coating solids (kilograms per liter).

$L_c$the volume of coating consumed, as received (liters).

$L_d$the volume of VOC-solvent added to coatings (liters).

$L_r$the volume of VOC-solvent recovered by an emission control device (liters).

$L_s$the volume of coating solids consumed (liters).

$M_d$the mass of VOC-solvent added to coatings (kilograms).

$M_o$the mass of VOC's in coatings consumed, as received (kilograms).

$M_r$the mass of VOC's recovered by an emission control device (kilograms).

Nthe volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of applied coating solids (kilograms per liter).

$Q_a$the volumetric flow rate of a gas stream leaving a control device and entering the atmosphere (dry standard cubic meters per hour).

$Q_b$the volumetric flow rate of a gas stream entering a control device (dry standard cubic meters per hour).

$Q_f$the volumetric flow rate of a gas stream emitted directly to the atmosphere (dry standard cubic meters per hour).

Rthe overall VOC emission reduction achieved for an affected facility (fraction).

Tthe transfer efficiency (fraction).

$V_s$the proportion of solids in a coating (or input stream), as received (fraction by volume).

$W_o$the proportion of VOC's in a coating (or input stream), as received (fraction by weight).

§ 60.452 Standard for volatile organic compounds.

On or after the date on which the performance test required by § 60.8 is completed, no owner or operator of an

affected facility subject to the provisions of this subpart shall discharge or cause the discharge of VOC emissions that exceed 0.90 kilogram of VOC's per liter of applied coating solids from any surface coating operation on a large appliance surface coating line.

§ 60.453 Performance test and compliance provisions.

(a) Sections 60.8 (d) and (f) do not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility according to the procedures in this paragraph.

(1) An owner or operator shall use the following procedures for any affected facility that does not use a capture system and control device to comply with the emissions limit specified under § 60.452. The owner or operator shall determine the composition of the coatings by formulation data supplied by the coating manufacturer or by analysis of each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the coating manufacturer to determine the VOC content of coatings using Method 24. The owner or operator shall determine the volume of coating and the mass of VOC-solvent used for thinning purposes from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coatings used at each facility, by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Except as provided in paragraph (b)(1)(iv) of this section, the weighted average of the total mass of VOC's consumed per unit volume of coating solids applied each calendar month will be determined as follows.

(A) Calculate the mass of VOC's consumed ($M_o + M_d$) during the calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}, \qquad (1)$$

($\Sigma L_{dj} D_{dj}$ will be 0 if no VOC-solvent is added to the coatings, as received)

where:

n is the number of different coatings used during the calendar month, and

m is the number of different VOC-solvents added to coatings during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in the calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}, \qquad (2)$$

where n is the number of different coatings used during the calendar month.

(C) Select the appropriate transfer efficiency from table 1. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiencies for application methods not listed shall be determined by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the accuracy of the transfer efficiency claims.

TABLE 1—TRANSFER EFFICIENCIES

Application method	Transfer efficiency (T_k)
Air-atomized spray	0.40
Airless spray	0.45
Manual electrostatic spray	0.60
Flow coat	0.85

TABLE 1—TRANSFER EFFICIENCIES—Continued

Application method	Transfer efficiency (T_k)
Dip coat	0.85
Nonrotational automatic electrostatic spray	0.85
Rotating head automatic electrostatic spray	0.90
Electrodeposition	0.95

Where more than one application method is used within a single surface coating operation, the owner or operator shall determine the composition and volume of each coating applied by each method through a means acceptable to the Administrator and compute the weighted average transfer efficiency by the following equation:

$$T = \frac{\sum_{i=1}^{n}\sum_{k=1}^{m} L_{cik}\ V_{sik}\ T_k}{L_s} \qquad (3)$$

where:

n is the number of coatings (or input streams) used, and

m is the number of application methods used.

(D) Calculate the volume-weighted average mass of VOC's consumed per unit volume of coating solids applied (G) during the calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T} \qquad (4)$$

(ii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during the calendar month for each affected facility by the following equation:

$$N = G \qquad (5)$$

(iii) Where the volume-weighted average mass of VOC's discharged to the atmosphere per unit volume of coating solids applied (N) is equal to or less than 0.90 kilogram per liter, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content, as received, which when divided by the lowest transfer efficiency at which the coating is applied, results in a value equal to or less than 0.90 kilogram per liter, the affected facility is in compliance, provided no VOC's are added to the coating during distribution or application.

(2) An owner or operator shall use the following procedures for any affected facility that uses a capture system and a control device that destroys VOC's (e.g., incinerator) to comply with the emission limit specified under § 60.452.

(i) Determine the overall reduction efficiency (R) for the capture system and control device. For the initial performance test the overall reduction efficiency (R) shall be determined as prescribed in A, B, and C below. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test, providing control device and capture system operating conditions have not changed. The procedure in A, B, and C, below, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC's emitted by an affected facility that enters the control device using the following equation:

$$F = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi}}{\sum_{i=1}^{n} Q_{bi}C_{bi} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \qquad (6)$$

where:

n is the number of gas streams entering the control device

p is the number of gas streams emitted directly to the atmosphere.

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{m} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}}$$

where:

n is the number of gas streams entering the control device, and

m is the number of gas streams leaving the control device and entering the atmosphere.

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

(C) Determine overall reduction efficiency (R) using the following equation:

$$R=EF \qquad (8)$$

(ii) Calculate the volume-weighted average of the total mass of VOC's per unit volume of applied coating solids (G) during each calendar month for each affected facility using equations (1), (2), (3) if applicable, and (4).

(iii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month by the following equation:

$$N=G(1-R) \qquad (9)$$

(iv) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is equal to or less than 0.90 kilogram per liter of applied coating solids, the affected facility is in compliance.

(3) An owner or operator shall use the following procedure for any affected facility that uses a control device for VOC recovery (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.452.

(i) Calculate the total mass of VOC's consumed (M_o+M_d) and the volume-weighted average of the total mass of VOC's per unit volume of applied coating solids (G) during each calendar month for each affected facility using equations (1), (2), (3) if applicable, and (4).

(ii) Calculate the total mass of VOC's recovered (M_r) during each calendar month using the following equation:

$$M_r=L_r\ D_r \qquad (10)$$

(iii) Calculate overall reduction efficiency of the control device (R) for each calendar month for each affected facility using the following equation:

$$R=\frac{M_r}{M_o+M_d} \qquad (11)$$

(iv) Calculate the volume-weighted average mass of VOC's emitted to the atmosphere (N) for each calendar month for each affected facility using equation (9).

(v) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is equal to or less than 0.90 kilogram per liter of applied coating solids, the affected facility is in compliance. Each monthly calculation is considered a performance test.

[47 FR 47785, Oct. 27, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.454 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses a capture system and an incinerator to comply with the emission limits specified under § 60.452 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below:

(1) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of 0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(3) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

[47 FR 47785, Oct. 27, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.455 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for a period

of 1 calendar month from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.453(b)(1)(iv), a list of the coatings used during a period of 1 calendar month, the VOC content of each coating calculated from data determined using Reference Method 24 or supplied by the coating manufacturer, and the minimum transfer efficiency of any coating application equipment used during the month.

(3) For each affected facility where compliance is achieved through use of an incineration system, the following additional information will be reported:

(i) The proportion of total VOC's emitted that enters the control device (F),

(ii) The VOC reduction efficiency of the control device (E),

(iii) The average combustion temperature (or the average temperature upstream and downstream of the catalyst bed), and

(iv) A description of the method used to establish the amount of VOC's captured and sent to the incinerator.

(4) For each affected facility where compliance is achieved through use of a solvent recovery system, the following additional information will be reported:

(i) The volume of VOC-solvent recovered (L_r), and

(ii) The overall VOC emission reduction achieved (R).

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under § 60.452. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit at the frequency specified in § 60.7(c) the following:

(1) Where compliance with § 60.452 is achieved through use of thermal incineration, each 3-hour period of coating operation during which the average temperature of the device was more than 28 °C (50 °F) below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under § 60.453.

(2) Where compliance with § 60.452 is achieved through the use of catalytic incineration, each 3-hour period of coating operation during which the average temperature recorded immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature at the same location during the most recent performance test at which destruction efficiency was determined as specified under § 60.453. Additionally, all 3-hour periods of coating operation during which 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 at which destruction efficiency was determined as specified under § 60.453 will be recorded.

(3) For thermal and catalytic incinerators, if no such periods as described in paragraphs (c)(1) and (c)(2) of this section occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine VOC emissions from each affected facility. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain at the source daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the

amount of solvent recovered by the system for each affected facility.

[47 FR 47785, Oct. 27, 1982, as amended at 55 FR 51383, Dec. 13, 1990; 65 FR 61761, Oct. 17, 2000]

§ 60.456 Test methods and procedures.

(a) The reference methods in appendix A to this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.452 as follows:

(1) Method 24 or formulation data supplied by the coating manufacturer to determine the VOC content of a coating. In the event of dispute, Method 24 shall be the reference method. For determining compliance only, results of Method 24 analyses of waterborne coatings shall be adjusted as described in Section 12.6 of Method 24. Procedures to determine VOC emissions are provided in § 60.453.

(2) Method 25 for the measurement of the VOC concentration in the gas stream vent.

(3) Method 1 for sample and velocity traverses.

(4) Method 2 for velocity and volumetric flow rate.

(5) Method 3 for gas analysis.

(6) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-liter sample taken into a 1-liter container at a point where the sample will be representative of the coating material.

(c) For Method 25, the sample time for each of three runs is to be at least 60 minutes and the minimum sample volume is to be at least 0.003 dscm (0.1 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(d) The Administrator will approve sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

[47 FR 47785, Oct. 27, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

Subpart TT—Standards of Performance for Metal Coil Surface Coating

SOURCE: 47 FR 49612, Nov. 1, 1982, unless otherwise noted.

§ 60.460 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in a metal coil surface coating operation: each prime coat operation, each finish coat operation, and each prime and finish coat operation combined when the finish coat is applied wet on wet over the prime coat and both coatings are cured simultaneously.

(b) This subpart applies to any facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after January 5, 1981.

§ 60.461 Definitions.

(a) All terms used in this subpart not defined below are given the same meaning as in the Act or in subpart A of this part.

Coating means any organic material that is applied to the surface of metal coil.

Coating application station means that portion of the metal coil surface coating operation where the coating is applied to the surface of the metal coil. Included as part of the coating application station is the flashoff area between the coating application station and the curing oven.

Curing oven means the device that uses heat or radiation to dry or cure the coating applied to the metal coil.

Finish coat operation means the coating application station, curing oven, and quench station used to apply and dry or cure the final coating(s) on the surface of the metal coil. Where only a single coating is applied to the metal coil, that coating is considered a finish coat.

Metal coil surface coating operation means the application system used to apply an organic coating to the surface of any continuous metal strip with thickness of 0.15 millimeter (mm) (0.006 in.) or more that is packaged in a roll or coil.

Prime coat operation means the coating application station, curing oven, and quench station used to apply and dry or cure the initial coating(s) on the surface of the metal coil.

Quench station means that portion of the metal coil surface coating operation where the coated metal coil is cooled, usually by a water spray, after baking or curing.

VOC content means the quantity, in kilograms per liter of coating solids, of volatile organic compounds (VOC's) in a coating.

(b) All symbols used in this subpart not defined below are given the same meaning as in the Act and in subpart A of this part.

C_a= the VOC concentration in each gas stream leaving the control device and entering the atmosphere (parts per million by volume, as carbon).

C_b= the VOC concentration in each gas stream entering the control device (parts per million by volume, as carbon).

C_f= the VOC concentration in each gas steam emitted directly to the atmosphere (parts per million by volume, as carbon).

D_c= density of each coating, as received (kilograms per liter).

D_d= density of each VOC-solvent added to coatings (kilograms per liter).

D_r= density of VOC-solvent recovered by an emission control device (kilograms per liter).

E= VOC destruction efficiency of the control device (fraction).

F= the proportion of total VOC's emitted by an affected facility that enters the control device (fraction).

G= volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of coating solids applied (kilograms per liter).

L_c= the volume of each coating consumed, as received (liters).

L_d= the volume of each VOC-solvent added to coatings (liters).

L_r= the volume of VOC-solvent recovered by an emission control device (liters).

L_s= the volume of coating solids consumed (liters).

M_d= the mass of VOC-solvent added to coatings (kilograms).

M_o= the mass of VOC's in coatings consumed, as received (kilograms).

M_r= the mass of VOC's recovered by an emission control device (kilograms).

N= the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter).

Q_a= the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere (dry standard cubic meters per hour).

Q_b= the volumetric flow rate of each gas stream entering the control device (dry standard cubic meters per hour).

Q_f= the volumetric flow rate of each gas steam emitted directly to the atmosphere (dry standard cubic meters per hour).

R= the overall VOC emission reduction achieved for an affected facility (fraction).

S= the calculated monthly allowable emission limit (kilograms of VOC per liter of coating solids applied).

V_s= the proportion of solids in each coating, as received (fraction by volume).

W_o= the proportion of VOC's in each coating, as received (fraction by weight).

§ 60.462 Standards for volatile organic compounds.

(a) On and after the date on which § 60.8 requires a performance test to be completed, each owner or operator subject to this subpart shall not cause to be discharged into the atmosphere more than:

(1) 0.28 kilogram VOC per liter (kg VOC/*l*) of coating solids applied for each calendar month for each affected facility that does not use an emission control device(s); or

(2) 0.14 kg VOC/*l* of coating solids applied for each calendar month for each affected facility that continuously uses an emission control device(s) operated at the most recently demonstrated overall efficiency; or

(3) 10 percent of the VOC's applied for each calendar month (90 percent emission reduction) for each affected facility that continuously uses an emission control device(s) operated at the most recently demonstrated overall efficiency; or

(4) A value between 0.14 (or a 90-percent emission reduction) and 0.28 kg VOC/*l* of coating solids applied for each calendar month for each affected facility that intermittently uses an emission control device operated at the most recently demonstrated overall efficiency.

§ 60.463 Performance test and compliance provisions.

(a) Section 60.8(d) and (f) do not apply to the performance test.

(b) The owner or operator of an affected facility shall conduct an initial

performance test as required under § 60.8(a) and thereafter a performance test for each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining monthly volume-weighted average emissions of VOC's in kg/*l* of coating solids applied.

(1) An owner or operator shall use the following procedures for each affected facility that does not use a capture system and control device to comply with the emission limit specified under § 60.462(a)(1). The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or by an analysisof each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coatings to determine the VOC content of coatings using Method 24 or an equivalent or alternative method. The owner or operator shall determine the volume of coating and the mass of VOC-solvent added to coatings from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coating used at each affected facility by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Calculate the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied during each calendar month for each affected facility, except as provided under paragraph (c)(1)(iv) of this section. The weighted average of the total mass of VOC's used per unit volume of coating solids applied each calendar month is determined by the following procedures.

(A) Calculate the mass of VOC's used (Mo+Md) during each calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj} \qquad \text{Equation 1}$$

($\Sigma L_{dj} D_{dj}$ will be 0 if no VOC solvent is added to the coatings, as received)

where

n is the number of different coatings used during the calendar month, and

m is the number of different VOC solvents added to coatings used during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in each calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} V_{si} L_{ci} \qquad \text{Equation 2}$$

Where:

n is the number of different coatings used during the calendar month.

(C) Calculate the volume-weighted average mass of VOC's used per unit volume of coating solids applied (G) during the calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s} \qquad \text{Equation 3}$$

(ii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during the calendar month for each affected facility by the following equation:

$$N = G \qquad \text{Equation 4}$$

(iii) Where the volume-weighted average mass of VOC's discharged to the atmosphere per unit volume of coating solids applied (N) is equal to or less than 0.28 kg/*l*, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content, as received, that is equal to or less than 0.28 kg/*l* of coating solids, the affected facility is in compliance provided no VOC's are added to the coatings during distribution or application.

(2) An owner or operator shall use the following procedures for each affected facility that continuously uses a capture system and a control device that destroys VOC's (e.g., incinerator) to comply with the emission limit specified under § 60.462(a) (2) or (3).

(i) Determine the overall reduction efficiency (R) for the capture system and control device.

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed in paragraphs (c)(2)(i) (A), (B), and (C) of this section. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test, providing control device and capture system operating conditions have not changed. The procedure in paragraphs (c)(2)(i) (A), (B), and (C) of this section, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC's emitted by an affected facility that enters the control device using the following equation:

$$F = \frac{\sum_{i=1}^{l} C_{bi} Q_{bi}}{\sum_{i=1}^{l} C_{bi} Q_{bi} + \sum_{i=1}^{p} C_{fi} Q_{fi}}$$

Equation 5

Where:

l is the number of gas streams entering the control device, and

p is the number of gas streams emitted directly to the atmosphere.

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}$$

Equation 6

Where:

n is the number of gas streams entering the control device, and

m is the number of gas streams leaving the control device and entering the atmosphere.

The owner or operator of the affected facility shall construct the VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.466. The owner or operator of the affected facility shall construct a temporary enclosure around the coating applicator and flashoff area during the performance test for the purpose of evaluating the capture efficiency of the system. The enclosure must be maintained at a negative pressure to ensure that all VOC emissions are measurable. If a permanent enclosure exists in the affected facility prior to the performance test and the Administrator is satisfied that the enclosure is adequately containing VOC emissions, no additional enclosure is required for the performance test.

(C) Determine overall reduction efficiency (R) using the following equation:

$$R = EF \qquad \text{Equation 7}$$

If the overall reduction efficiency (R) is equal to or greater than 0.90, the affected facility is in compliance and no further computations are necessary. If the overall reduction efficiency (R) is less than 0.90, the average total VOC emissions to the atmosphere per unit volume of coating solids applied (N) shall be computed as follows.

(ii) Calculate the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraphs (c)(1)(i) (A), (B), and (C) of this section.

(iii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month by the following equation:

$$N = G(1 - R) \qquad \text{Equation 8}$$

(iv) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.14 kg/*l* of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

(3) An owner or operator shall use the following procedure for each affected facility that uses a control device that recovers the VOC's (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.462(a) (2) or (3).

(i) Calculate the total mass of VOC's consumed (M_o+M_d) during each calendar month for each affected facility using equation (1).

(ii) Calculate the total mass of VOC's recovered (M_r) during each calendar month using the following equation:

$$M_r = L_r D_r \qquad \text{Equation 9}$$

(iii) Calculate the overall reduction efficiency of the control device (R) for each calendar month for each affected facility using the following equation:

$$R = \frac{M_r}{M_o + M_d} \qquad \text{Equation 10}$$

If the overall reduction efficiency (R) is equal to or greater than 0.90, the affected facility is in compliance and no further computations are necessary. If the overall reduction efficiency (R) is less than 0.90, the average total VOC emissions to the atmosphere per unit volume of coating solids applied (N) must be computed as follows.

(iv) Calculate the total volume of coating solids consumed (L_s) and the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraphs (c)(1)(i) (B) and (C) of this section.

(v) Calculate the volume-weighted average mass of VOC's emitted to the atmosphere (N) for each calendar month for each affected facility using equation (8).

(vi) If the weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.14 kg/*l* of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

(4) An owner or operator shall use the following procedures for each affected facility that intermittently uses a capture system and a control device to comply with the emission limit specified in § 60.462(a)(4).

(i) Calculate the total volume of coating solids applied without the control device in operation (L_{sn}) during each calendar month for each affected facility using the following equation:

$$L_{sn} = \sum_{i-1}^{n} V_{si} L_{ci} \qquad \text{Equation 11}$$

Where:

n is the number of coatings used during the calendar month without the control device in operation.

(ii) Calculate the total volume of coating solids applied with the control device in operation (L_{sc}) during each calendar month for each affected facility using the following equation:

$$L_{sc} = \sum_{i-1}^{n} V_{si} L_{ci} \qquad \text{Equation 12}$$

Where:

n is the number of coatings used during the calendar month with the control device in operation.

(iii) Calculate the mass of VOC's used without the control device in operation (M_{on}+M_{dn}) during each calendar month for each affected facility using the following equation:

$$M_{on} + M_{dn} + \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj} \qquad \text{Equation 13}$$

Where:

n is the number of different coatings used without the control device in operation during the calendar month, and

m is the number of different VOC-solvents added to coatings used without the control device in operation during the calendar month.

(iv) Calculate the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied without the control device in operation (G_n) during each calendar month for each affected facility using the following equation:

$$G_n = \frac{M_{on} + M_{dn}}{L_{sn}} \qquad \text{Equation 14}$$

(v) Calculate the mass of VOC's used with the control device in operation (M_{oc}+M_{dc}) during each calendar month for each affected facility using the following equation:

$$M_{oc} + M_{dc} = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{i=1}^{m} L_{dj} D_{dj} \qquad \text{Equation 15}$$

Where:

n is the number of different coatings used with the control device in operation during the calendar month, and

m is the number of different VOC-solvents added to coatings used with the control device in operation during the calendar month.

(vi) Calculate the volume-weighted average of the total mass of VOC's used per unit volume of coating solids applied with the control device in operation (G_c) during each calendar month for each affected facility using the following equation:

$$G = \frac{M_{oc} + M_{dc}}{L_{sn}} \qquad \text{Equation 16}$$

(vii) Determine the overall reduction efficiency (R) for the capture system and control device using the procedures in paragraphs (c)(2)(i) (A), (B), and (C) or paragraphs (c)(3) (i), (ii), and (iii) of this section, whichever is applicable.

(viii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month for each affected facility using the following equation:

$$N = \frac{G_n L_{sn} + G_c L_{sc}(1 - R)}{L_{sn} + L_{sc}} \qquad \text{Equation 17}$$

Equation 17

(ix) Calculate the emission limit(s) for each calendar month for each affected facility using the following equation:

$$S = \frac{0.28\ L_{sn} + 0.1\ G_c L_{sc}}{L_{ns} + L_{sc}}$$

or

$$\frac{0.28\ L_{sn} + 0.14\ L_{sc}}{L_{sn} + L_{sc}} \qquad \text{Equation 18}$$

whichever is greater.

(x) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to the calculated emission limit (S) for the calendar month, the affected facility is in compliance. Each monthly calculation is a performance test.

[47 FR 49612, Nov. 1, 1982; 48 FR 1056, Jan. 10, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.464 Monitoring of emissions and operations.

(a) Where compliance with the numerical limit specified in § 60.462(a) (1) or (2) is achieved through the use of

low VOC-content coatings without the use of emission control devices or through the use of higher VOC-content coatings in conjunction with emission control devices, the owner or operator shall compute and record the average VOC content of coatings applied during each calendar month for each affected facility, according to the equations provided in § 60.463.

(b) Where compliance with the limit specified in § 60.462(a)(4) is achieved through the intermittent use of emission control devices, the owner or operator shall compute and record for each affected facility the average VOC content of coatings applied during each calendar month according to the equations provided in § 60.463.

(c) If thermal incineration is used, each owner or operator subject to the provisions of this subpart shall install, calibrate, operate, and maintain a device that continuously records the combustion temperature of any effluent gases incinerated to achieve compliance with § 60.462(a)(2), (3), or (4). This device shall have an accuracy of ±2.5 °C. or ±0.75 percent of the temperature being measured expressed in degrees Celsius, whichever is greater. Each owner or operator shall also record all periods (during actual coating operations) in excess of 3 hours during which the average temperature in any thermal incinerator used to control emissions from an affected facility remains more than 28 °C (50 °F) below the temperature at which compliance with § 60.462(a)(2), (3), or (4) was demonstrated during the most recent measurement of incinerator efficiency required by § 60.8. The records required by § 60.7 shall identify each such occurrence and its duration. If catalytic incineration is used, the owner or operator shall install, calibrate, operate, and maintain a device to monitor and record continuously the gas temperature both upstream and downstream of the incinerator catalyst bed. This device shall have an accuracy of ±2.5 °C. or ±0.75 percent of the temperature being measured expressed in degrees Celsius, whichever is greater. During coating operations, the owner or operator shall record all periods in excess of 3 hours where the average difference between the temperature upstream and downstream of the incinerator catalyst bed remains below 80 percent of the temperature difference at which compliance was demonstrated during the most recent measurement of incinerator efficiency or when the inlet temperature falls more than 28 °C (50 °F) below the temperature at which compliance with § 60.462(a)(2), (3), or (4) was demonstrated during the most recent measurement of incinerator efficiency required by § 60.8. The records required by § 60.7 shall identify each such occurrence and its duration.

[47 FR 49612, Nov. 1, 1982; 48 FR 1056, Jan. 10, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.465 Reporting and recordkeeping requirements.

(a) Where compliance with the numerical limit specified in § 60.462(a) (1), (2), or (4) is achieved through the use of low VOC-content coatings without emission control devices or through the use of higher VOC-content coatings in conjunction with emission control devices, each owner or operator subject to the provisions of this subpart shall include in the initial compliance report required by § 60.8 the weighted average of the VOC content of coatings used during a period of one calendar month for each affected facility. Where compliance with § 60.462(a)(4) is achieved through the intermittent use of a control device, reports shall include separate values of the weighted average VOC content of coatings used with and without the control device in operation.

(b) Where compliance with § 60.462(a)(2), (3), or (4) is achieved through the use of an emission control device that destroys VOC's, each owner or operator subject to the provisions of this subpart shall include the following data in the initial compliance report required by § 60.8:

(1) The overall VOC destruction rate used to attain compliance with § 60.462(a)(2), (3), or (4) and the calculated emission limit used to attain compliance with § 60.462(a)(4); and

(2) The combustion temperature of the thermal incinerator or the gas temperature, both upstream and downstream of the incinerator catalyst bed, used to attain compliance with § 60.462(a)(2), (3), or (4).

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the local mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under § 60.462. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(d) The owner or operator of each affected facility shall also submit reports at the frequency specified in § 60.7(c) when the incinerator temperature drops as defined under § 60.464(c). If no such periods occur, the owner or operator shall state this in the report.

(e) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each affected facility and to determine the monthly emission limit, where applicable. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain, at the source, daily records of the incinerator combustion temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed.

[47 FR 49612, Nov. 1, 1982, as amended at 55 FR 51383, Dec. 13, 1990; 56 FR 20497, May 3, 1991; 65 FR 61761, Oct. 17, 2000]

§ 60.466 Test methods and procedures.

(a) The reference methods in appendix A to this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.462 as follows:

(1) Method 24, or data provided by the formulator of the coating, shall be used for determining the VOC content of each coating as applied to the surface of the metal coil. In the event of a dispute, Method 24 shall be the reference method. When VOC content of waterborne coatings, determined by Method 24, is used to determine compliance of affected facilities, the results of the Method 24 analysis shall be adjusted as described in Section 12.6 of Method 24;

(2) Method 25, both for measuring the VOC concentration in each gas stream entering and leaving the control device on each stack equipped with an emission control device and for measuring the VOC concentration in each gas stream emitted directly to the atmosphere;

(3) Method 1 for sample and velocity traverses;

(4) Method 2 for velocity and volumetric flow rate;

(5) Method 3 for gas analysis; and

(6) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be at least a 1-liter sample taken at a point where the sample will be representative of the coating as applied to the surface of the metal coil.

(c) For Method 25, the sampling time for each of three runs is to be at least 60 minutes, and the minimum sampling volume is to be at least 0.003 dscm (0.11 dscf); however, shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(d) The Administrator will approve testing of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that testing of representative stacks yields results comparable to those that would be obtained by testing all stacks.

[47 FR 49612, Nov. 1, 1982, as amended at 51 FR 22938, June 24, 1986; 65 FR 61761, Oct. 17, 2000]

Subpart UU—Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture

SOURCE: 47 FR 34143, Aug. 6, 1982, unless otherwise noted.

§ 60.470 Applicability and designation of affected facilities.

(a) The affected facilities to which this subpart applies are each saturator and each mineral handling and storage facility at asphalt roofing plants; and each asphalt storage tank and each blowing still at asphalt processing

plants, petroleum refineries, and asphalt roofing plants.

(b) Any saturator or mineral handling and storage facility under paragraph (a) of this section that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart. Any asphalt storage tank or blowing still that processes and/or stores asphalt used for roofing only or for roofing and other purposes, and that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart.

Any asphalt storage tank or blowing still that processes and/or stores only nonroofing asphalts and that commences construction or modification after May 26, 1981, is subject to the requirements of this subpart.

§ 60.471 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Afterburner (A/B) means an exhaust gas incinerator used to control emissions of particulate matter.

Asphalt processing means the storage and blowing of asphalt.

Asphalt processing plant means a plant which blows asphalt for use in the manufacture of asphalt products.

Asphalt roofing plant means a plant which produces asphalt roofing products (shingles, roll roofing, siding, or saturated felt).

Asphalt storage tank means any tank used to store asphalt at asphalt roofing plants, petroleum refineries, and asphalt processing plants. Storage tanks containing cutback asphalts (asphalts diluted with solvents to reduce viscosity for low temperature applications) and emulsified asphalts (asphalts dispersed in water with an emulsifying agent) are not subject to this regulation.

Blowing still means the equipment in which air is blown through asphalt flux to change the softening point and penetration rate.

Catalyst means a substance which, when added to asphalt flux in a blowing still, alters the penetrating-softening point relationship or increases the rate of oxidation of the flux.

Coating blow means the process in which air is blown through hot asphalt flux to produce coating asphalt. The coating blow starts when the air is turned on and stops when the air is turned off.

Electrostatic precipitator (ESP) means an air pollution control device in which solid or liquid particulates in a gas stream are charged as they pass through an electric field and precipitated on a collection suface.

High velocity air filter (HVAF) means an air pollution control filtration device for the removal of sticky, oily, or liquid aerosol particulate matter from exhaust gas streams.

Mineral handling and storage facility means the areas in asphalt roofing plants in which minerals are unloaded from a carrier, the conveyor transfer points between the carrier and the storage silos, and the storage silos.

Saturator means the equipment in which asphalt is applied to felt to make asphalt roofing products. The term saturator includes the saturator, wet looper, and coater.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.472 Standards for particulate matter.

(a) On and after the date on which § 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any saturator:

(1) Particulate matter in excess of:

(i) 0.04 kg/Mg (0.08 lb/ton) of asphalt shingle or mineral-surfaced roll roofing produced, or

(ii) 0.04 kg/Mg (0.08 lb/ton) of saturated felt or smooth-surfaced roll roofing produced;

(2) Exhaust gases with opacity greater than 20 percent; and

(3) Any visible emissions from a saturator capture system for more than 20 percent of any period of consecutive valid observations totaling 60 minutes. Saturators that were constructed before November 18, 1980, and that have not been reconstructed since that date and that become subject to these standards through modification are exempt from the visible emissions standard. Saturators that have been newly

constructed or reconstructed since November 18, 1980 are subject to the visible emissions standard.

(b) On and after the date on which § 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blowing still:

(1) Particulate matter in excess of 0.67 kg/Mg (1.3 lb/ton) of asphalt charged to the still when a catalyst is added to the still; and

(2) Particulate matter in excess of 0.71 kg/Mg (1.4 lb/ton) of asphalt charged to the still when a catalyst is added to the still and when No. 6 fuel oil is fired in the afterburner; and

(3) Particulate matter in excess of 0.60 kg/Mg (1.2 lb/ton) of asphalt charged to the still during blowing without a catalyst; and

(4) Particulate matter in excess of 0.64 kg/Mg (1.3 lb/ton) of asphalt charged to the still during blowing without a catalyst and when No. 6 fuel oil is fired in the afterburner; and

(5) Exhaust gases with an opacity greater than 0 percent unless an opacity limit for the blowing still when fuel oil is used to fire the afterburner has been established by the Administrator in accordance with the procedures in § 60.474(g).

(c) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any asphalt storage tank exhaust gases with opacity greater than 0 percent, except for one consecutive 15-minute period in any 24-hour period when the transfer lines are being blown for clearing. The control device shall not be bypassed during this 15-minute period. If, however, the emissions from any asphalt storage tank(s) are ducted to a control device for a saturator, the combined emissions shall meet the emission limit contained in paragraph (a) of this section during the time the saturator control device is operating. At any other time the asphalt storage tank(s) must meet the opacity limit specified above for storage tanks.

(d) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any mineral handling and storage facility emissions with opacity greater than 1 percent.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.473 Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart, and using either an electrostatic precipitator or a high velocity air filter to meet the emission limit in § 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature of the gas at the inlet of the control device. The temperature monitoring instrument shall have an accuracy of ±15 °C (±25 °F) over its range.

(b) The owner or operator subject to the provisions of this subpart and using an afterburner to meet the emission limit in § 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature in the combustion zone of the afterburner. The monitoring instrument shall have an accuracy of ±10 °C (±18 °F) over its range.

(c) An owner or operator subject to the provisions of this subpart and using a control device not mentioned in paragraphs (a) or (b) of this section shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may require continuous monitoring and will determine the process parameters to be monitored.

(d) The industry is exempted from the quarterly reports required under § 60.7(c). The owner/operator is required to record and report the operating temperature of the control device during the performance test and, as required

by § 60.7(d), maintain a file of the temperature monitoring results for at least two years.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.474 Test methods and procedures.

(a) For saturators, the owner or operator shall conduct performance tests required in § 60.8 as follows:

(1) If the final product is shingle or mineral-surfaced roll roofing, the tests shall be conducted while 106.6-kg (235-lb) shingle is being produced.

(2) If the final product is saturated felt or smooth-surfaced roll roofing, the tests shall be conducted while 6.8-kg (15-lb) felt is being produced.

(3) If the final product is fiberglass shingle, the test shall be conducted while a nominal 100-kg (220-lb) shingle is being produced.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.472 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/(PK)$$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton).

c_s=concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=asphalt roofing production rate or asphalt charging rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg [7000 (gr/lb)].

(2) Method 5A shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. For a saturator, the sampling time and sample volume for each run shall be at least 120 minutes and 3.00 dscm (106 dscf), and for the blowing still, at least 90 minutes or the duration of the coating blow or non-coating blow, whichever is greater, and 2.25 dscm (79.4 dscf).

(3) For the saturator, the asphalt roofing production rate (P) for each run shall be determined as follows: The amount of asphalt roofing produced on the shingle or saturated felt process lines shall be obtained by direct measurement. The asphalt roofing production rate is the amount produced divided by the time taken for the run.

(4) For the blowing still, the asphalt charging rate (P) shall be computed for each run using the following equation:

$$P=(Vd)/(K'\theta)$$

where:

P=asphalt charging rate to blowing still, Mg/hr (ton/hr).

V=volume of asphalt charged, m^3 (ft^3).

d=density of asphalt, kg/m^3 (lb/ft^3).

K′=conversion factor, 1000 kg/Mg (2000 lb/ton).

θ=duration of test run, hr.

(i) The volume (V) of asphalt charged shall be measured by any means accurate to within 10 percent.

(ii) The density (d) of the asphalt shall be computed using the following equation:

$$d = K_1 - K_2 T_i$$

Where:

d = Density of the asphalt, kg/m^3 (lb/ft^3)

K_1 = 1056.1 kg/m^3 (metric units)
= 64.70 lb/ft^3 (English Units)

K_2 = 0.6176 $kg/(m^3\ °C)$ (metric units)
= 0.0694 $lb/(ft^3\ °F)$ (English Units)

T_i = temperature at the start of the blow, °C ((°deg;F)

(5) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(d) The Administrator will determine compliance with the standards in § 60.472(a)(3) by using Method 22, modified so that readings are recorded every 15 seconds for a period of consecutive observations during representative conditions (in accordance with § 60.8(c)) totaling 60 minutes. A performance test shall consist of one run.

(e) The owner or operator shall use the monitoring device in § 60.473 (a) or (b) to monitor and record continuously the temperature during the particulate matter run and shall report the results to the Administrator with the performance test results.

(f) If at a later date the owner or operator believes that the emission limits in § 60.472(a) and (b) are being met even though one of the conditions listed in this paragraph exist, he may submit a written request to the Administrator to repeat the performance test and procedure outlined in paragraph (c) of this section.

(1) The temperature measured in accordance with § 60.473(a) is exceeding that measured during the performance test.

(2) The temperature measured in accordance with § 60.473(b) is lower than that measured during the performance test.

(g) If fuel oil is to be used to fire an afterburner used to control emissions from a blowing still, the owner or operator may petition the Administrator in accordance with § 60.11(e) of the General Provisions to establish an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. To obtain this opacity standard, the owner or operator must request the Administrator to determine opacity during an initial, or subsequent, performance test when fuel oil is used to fire the afterburner. Upon receipt of the results of the performance test, the Administrator will make a finding concerning compliance with the mass standard for the blowing still. If the Administrator finds that the facility was in compliance with the mass standard during the performance test but failed to meet the zero opacity standard, the Administrator will establish and promulgate in the FEDERAL REGISTER an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. When the afterburner is fired with natural gas, the zero percent opacity remains the applicable opacity standard.

[54 FR 6677, Feb. 14, 1989, as amended 54 FR 27016, June 27, 1989; 65 FR 61762, Oct. 17, 2000]

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

SOURCE: 48 FR 48335, Oct. 18, 1983, unless otherwise noted.

§ 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in § 60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 5, 1981, and on or before November 7, 2006, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in § 60.486(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in § 60.489 is exempt from §§ 60.482–1 through 60.482–10.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§ 60.482–1 through 60.482–10.

(4) Any affected facility that produces beverage alcohol is exempt from §§ 60.482–1 through 60.482–10.

(5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§ 60.482–1 through 60.482–10.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§ 60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of § 60.485(d), (e), and (f) and § 60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(1)(ii) do not apply to owners and operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

(2) *Subpart VVa.* Owners or operators may choose to comply with the provisions of subpart VVa of this part 60 to satisfy the requirements of this subpart VV for an affected facility.

(f) *Stay of standards.* Owners or operators are not required to comply with the definition of ''process unit'' in § 60.481 and the requirements in § 60.482–1(g) of this subpart until the EPA takes final action to require compliance and publishes a document in the FEDERAL REGISTER. While the definition of ''process unit'' is stayed, owners or operators should use the following definition:

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in § 60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 72 FR 64879, Nov. 16, 2007, 73 FR 31379, June 2, 2008; 73 FR 31375, June 2, 2008]

§ 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$$A = Y \times (B \div 100);$$

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

TABLE FOR DETERMINING APPLICABLE VALUE FOR B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5
DDD	12.5
GGG	7.0
KKK	4.5

Closed-loop system means an enclosed system that returns process fluid to the process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers for purged liquids 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 to a process.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this subpart.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

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, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any 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 using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2300, Fairfield, NJ 07007–2300).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

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 § 60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of § 60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in § 60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in 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 accomplished. The following are not considered process unit shutdowns:

(1) 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.

(2) 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.

(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§ 60.482–2(b)(2)(ii) and (d)(6)(ii) and (iii), 60.482–3(f), and 60.482–10(f)(1)(ii), is re-monitored as specified in § 60.485(b) to verify that emissions from the equipment are below the applicable leak definition.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

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 nonroutine grab samples is not considered a sampling connection system.

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.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges, or ships.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in § 60.489.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in § 60.2 Definitions.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 49 FR 26738, June 29, 1984; 60 FR 43258, Aug. 18, 1995; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 72 FR 64879, Nov. 16, 2007]

EFFECTIVE DATE NOTE: At 73 FR 31375, June 2, 2008, in § 60.481, the definition of ''process unit'' was stayed until further notice.

§ 60.482–1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§ 60.482–1 through 60.482–10 or § 60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§ 60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§ 60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in § 60.484.

(2) If the Administrator makes a determination that a means of emission

limitation is at least equivalent to the requirements of §§ 60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, or 60.482–10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§ 60.482–2 to 60.482–10 if it is identified as required in § 60.486(e)(5).

(e) Equipment that an owner or operator designates as being in VOC service less than 300 hours (hr)/yr is excluded from the requirements of §§ 60.482–2 through 60.482–10 if it is identified as required in § 60.486(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.

(2) The equipment is in VOC service only during process malfunctions or other emergencies.

(3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.

(f)(1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps and valves at the frequency specified in the following table instead of monitoring as specified in §§ 60.482–2, 60.482–7, and 60.483–2:

Operating time (percent of hours during year)	Equivalent 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 quarters.	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time 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. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.

(i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.

(ii) When monitoring is conducted semiannually (*i.e.*, once every 2 quarters), monitoring events must be separated by at least 60 calendar days.

(iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.

(iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.

(g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to subpart VVa of this part, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to subpart VVa of this part, the storage vessel is assigned to any process unit subject to this subpart. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 78276, Dec. 14, 2000; 72 FR 64880, Nov. 16, 2007]

EFFECTIVE DATE NOTE: At 73 FR 31375, June 2, 2008, in § 60.482–1, paragraph (g) was stayed until further notice.

§ 60.482–2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in § 60.485(b), except as provided in § 60.482–1(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in § 60.482–1(c) and (f) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in § 60.482–1(f).

(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, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection if the instrument reading for that monitoring event was less than 10,000 ppm and the pump was not repaired since that monitoring event.

(i) Monitor the pump within 5 days as specified in § 60.485(b). If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak shall be repaired using the procedures in paragraph (c) of this section.

(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak within 15 days of detection by eliminating the visual indications of liquids dripping.

(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 § 60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.

(i) Tightening the packing gland nuts;

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Each pump 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 (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 pump stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of § 60.482–10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or 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)(i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section.

(A) Monitor the pump within 5 days as specified in § 60.485(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(B) Designate the visual indications of liquids dripping as a leak.

(5)(i) Each sensor as described in paragraph (d)(3) of this section is checked daily or is equipped with an audible alarm.

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion

that indicates failure of the seal system, the barrier fluid system, or both.

(iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.

(6)(i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.

(ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.

(iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.

(e) Any pump that is designated, as described in § 60.486(e)(1) and (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) of this section 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 methods specified in § 60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section 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 process or to a fuel gas system or to a control device that complies with the requirements of § 60.482–10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in § 60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) 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 practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) 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) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 72 FR 64880, Nov. 16, 2007]

§ 60.482–3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in § 60.482–1(c) and paragraphs (h), (i), and (j) 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 degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of § 60.482–10; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) 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) shall be checked daily or

shall be equipped with an audible alarm.

(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 system, or both based on the criterion determined under paragraph (e)(2), 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 § 60.482–9.

(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) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of § 60.482–10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in § 60.486(e) (1) and (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)–(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 methods specified in § 60.485(c); 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.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000; 72 FR 64881, Nov. 16, 2007]

§ 60.482–4 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 determined by the methods specified in § 60.485(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 the pressure release, except as provided in § 60.482–9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in § 60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in § 60.482–10 is exempted 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 new 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 § 60.482–9.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482–5 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 § 60.482–1(c) and paragraph (c) of this section.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section.

(1) Gases displaced during filling of the sample container are not required to be collected or captured.

(2) Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied.

(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.

(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section.

(i) Return the purged process fluid directly to the process line.

(ii) Collect and recycle the purged process fluid to a process.

(iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of § 60.482–10.

(iv) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(A) A waste management unit as defined in § 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266;

(C) 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;

(D) A waste management unit subject to and operated in compliance with the treatment requirements of § 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of §§ 61.343 through 61.347; or

(E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is 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.

[60 FR 43258, Aug. 18, 1995, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000; 72 FR 64881, Nov. 16, 2007]

§ 60.482–6 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 § 60.482–1(c) 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.

(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.

(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 paragraphs (a) through (c) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 78277, Dec. 14, 2000; 72 FR 64881, Nov. 16, 2007]

§ 60.482–7 Standards: Valves in gas/vapor service and in light liquid service.

(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in § 60.485(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1(c) and (f), and §§ 60.483–1 and 60.483–2.

(2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1(c), and §§ 60.483–1 and 60.483–2.

(i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.

(ii) If the valves on the process unit are monitored in accordance with § 60.483–1 or § 60.483–2, count the new valve as leaking when calculating the percentage of valves leaking as described in § 60.483–2(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1)(i) 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.

(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into 2 or 3 subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

(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 § 60.482–9.

(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;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in § 60.486(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 determined by the method specified in § 60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in § 60.486(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 adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in § 60.486(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 either becomes an affected facility through § 60.14 or § 60.15 or the owner or operator designates less than 3.0 percent of the total number of valves 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.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 72 FR 64881, Nov. 16, 2007]

§ 60.482–8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in § 60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

(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 § 60.482–9.

(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 §§ 60.482–2(c)(2) and 60.482–7(e).

[48 CFR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000; 72 FR 64882, Nov. 16, 2007]

§ 60.482–9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC 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 § 60.482–10.

(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.

(f) When delay of repair is allowed for a leaking pump or valve that remains in service, the pump or valve may be

considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000; 72 FR 64882, Nov. 16, 2007]

§ 60.482–10 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.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, 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 or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of § 60.18.

(e) Owners or operators of control devices 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 designs.

(f) Except as provided in paragraphs (i) through (k) 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 vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in § 60.485(b); 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 § 60.485(b); and

(ii) Conduct annual inspections according to the procedures in § 60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) 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.

(h) 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.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(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 (f)(1)(i) 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.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(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 process unit within which the closed vent system is located becomes an affected facility through §§ 60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system 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 closed vent system 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 inspection during which a leak is detected, a record of the information specified in § 60.486(c).

(4) For each inspection conducted in accordance with § 60.485(b) 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.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(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.

(m) 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.

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

§ 60.483–1 Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect 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 wishes 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 comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in § 60.487(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 § 60.482–7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in § 60.485(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 for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with

a leak percentage greater than 2.0 percent, determined as described in § 60.485(h).

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000; 72 FR 64882, Nov. 16, 2007]

§ 60.483–2 Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect 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 § 60.487(d).

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in § 60.482–7.

(2) After 2 consecutive quarterly leak detection periods with the percent 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 gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent 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 gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in § 60.482–7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined as described in § 60.485(h).

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

(7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with § 60.482–7(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000; 72 FR 64882, Nov. 16, 2007]

§ 60.484 Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

(2) The Administrator will compare test data for demonstrating equivalence of the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the approval of equivalence 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) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of

emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent 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 approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the FEDERAL REGISTER and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the FEDERAL REGISTER.

(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 72 FR 64882, Nov. 16, 2007]

§ 60.485 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§ 60.482–1 through 60.482–10, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(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 about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§ 60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see § 60.17)

shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units)

= 28.56 ft/sec (English units)

K_2 = 0.7084 m^4/(MJ-sec) (metric units)

= 0.087 ft^4/(Btu-sec) (English units)

(4) The net heating value (H_T) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component ''i,'' ppm

H_i = Net heat of combustion of sample component ''i'' at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 or ASTM D6420–99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 parts per billion by volume and 100 parts per million by volume) and ASTM D2504–67, 77 or 88 (Reapproved 1993) (incorporated by reference—see § 60.17) shall be used to determine the concentration of sample component ''i.''

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see § 60.17) shall be used to determine the net heat of combustion of component ''i'' if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

(h) The owner or operator shall determine compliance with § 60.483–1 or § 60.483–2 as follows:

(1) The percent of valves leaking shall be determined using the following equation:

$$\%V_L = (V_L/V_T) * 100$$

Where:

$\%V_L$ = Percent leaking valves

V_L = Number of valves found leaking

V_T = The sum of the total number of valves monitored

(2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.

(3) The number of valves leaking shall include valves for which repair has been delayed.

(4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.

(5) If the process unit has been subdivided in accordance with § 60.482–7(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.

(6) The total number of valves monitored does not include a valve monitored to verify repair.

[54 FR 6678, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61763, Oct. 17, 2000; 72 FR 64882, Nov. 16, 2007]

§ 60.486 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 affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in §§ 60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, 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 § 60.482–7(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 §§ 60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, 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 § 60.485(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 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 § 60.482–10 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 § 60.482–10(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 §§ 60.482–2, 60.482–3, 60.482–4, and 60.482–5 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 §§ 60.482–2, 60.482–3, 60.482–4, and 60.482–5.

(e) The following information pertaining to all equipment subject to the requirements in §§ 60.482–1 to 60.482–10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§ 60.482–2(e), 60.482–3(i) and 60.482–7(f).

(ii) The designation of equipment as subject to the requirements of § 60.482–2(e), § 60.482–3(i), or § 60.482–7(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.

(3) A list of equipment identification numbers for pressure relief devices required to comply with § 60.482–4.

(4)(i) The dates of each compliance test as required in §§ 60.482–2(e), 60.482–3(i), 60.482–4, and 60.482–7(f).

(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.

(6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with § 60.482–1(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.

(f) The following information pertaining to all valves subject to the requirements of § 60.482–7(g) and (h) and to all pumps subject to the requirements of § 60.482–2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(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 schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with § 60.483–2:

(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 §§ 60.482–2(d)(5) and 60.482–3(e)(2) and 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 § 60.480(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of § 60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000; 72 FR 64883, Nov. 16, 2007]

§ 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of § 60.482–7, excluding those valves designated for no detectable emissions under the provisions of § 60.482–7(f).

(3) Number of pumps subject to the requirements of § 60.482–2, excluding those pumps designated for no detectable emissions under the provisions of § 60.482–2(e) and those pumps complying with § 60.482–2(f).

(4) Number of compressors subject to the requirements of § 60.482–3, excluding those compressors designated for no detectable emissions under the provisions of § 60.482–3(i) and those compressors complying with § 60.482–3(h).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in § 60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in § 60.482–7(b) or § 60.483–2,

(ii) Number of valves for which leaks were not repaired as required in § 60.482–7(d)(1),

(iii) Number of pumps for which leaks were detected as described in § 60.482–2(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),

(iv) Number of pumps for which leaks were not repaired as required in § 60.482–2(c)(1) and (d)(6),

(v) Number of compressors for which leaks were detected as described in § 60.482–3(f),

(vi) Number of compressors for which leaks were not repaired as required in § 60.482–3(g)(1), and

(vii) The facts that explain each delay of repair 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 (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§ 60.483–1 or 60.483–2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with § 60.8 of the General Provisions. The provisions of § 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61763, Oct. 17, 2000; 72 FR 64883, Nov. 16, 2007]

§ 60.488 Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital costs that would be required to construct a comparable new facility'' under § 60.15: pump seals, nuts and bolts, rupture disks, and packings.

(b) Under § 60.15, the ''fixed capital cost of new components'' includes the fixed capital cost of all depreciable components (except components specified in § 60.488 (a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the ''Applicability and designation of affected facility'' section of the appropriate subpart.) For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a

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

[49 FR 22608, May 30, 1984]

§ 60.489 List of chemicals produced by affected facilities.

The following chemicals are produced, as intermediates or final products, by process units covered under this subpart. The applicability date for process units producing one or more of these chemicals is January 5, 1981.

CAS No. [a]	Chemical
105–57–7	Acetal.
75–07–0	Acetaldehyde.
107–89–1	Acetaldol.
60–35–5	Acetamide.
103–84–4	Acetanilide.
64–19–7	Acetic acid.
108–24–7	Acetic anhydride.
67–64–1	Acetone.
75–86–5	Acetone cyanohydrin.
75–05–8	Acetonitrile.
98–86–2	Acetophenone.
75–36–5	Acetyl chloride.
74–86–2	Acetylene.
107–02–8	Acrolein.
79–06–1	Acrylamide.
79–10–7	Acrylic acid.
107–13–1	Acrylonitrile.
124–04–9	Adipic acid.
111–69–3	Adiponitrile.
([b])	Alkyl naphthalenes.
107–18–6	Allyl alcohol.
107–05–1	Allyl chloride.
1321–11–5	Aminobenzoic acid.
111–41–1	Aminoethylethanolamine.
123–30–8	p-Aminophenol.
628–63–7, 123–92–2.	Amyl acetates.
71–41–0 [c]	Amyl alcohols.
110–58–7	Amyl amine.
543–59–9	Amyl chloride.
110–66–7 [c]	Amyl mercaptans.
1322–06–1	Amyl phenol.
62–53–3	Aniline.
142–04–1	Aniline hydrochloride.
29191–52–4	Anisidine.
100–66–3	Anisole.
118–92–3	Anthranilic acid.
84–65–1	Anthraquinone.
100–52–7	Benzaldehyde.
55–21–0	Benzamide.
71–43–2	Benzene.
98–48–6	Benzenedisulfonic acid.
98–11–3	Benzenesulfonic acid.
134–81–6	Benzil.
76–93–7	Benzilic acid.
65–85–0	Benzoic acid.
119–53–9	Benzoin.
100–47–0	Benzonitrile.
119–61–9	Benzophenone.
98–07–7	Benzotrichloride.
98–88–4	Benzoyl chloride.
100–51–6	Benzyl alcohol.
100–46–9	Benzylamine.
120–51–4	Benzyl benzoate.
100–44–7	Benzyl chloride.
98–87–3	Benzyl dichloride.
92–52–4	Biphenyl.
80–05–7	Bisphenol A.
10–86–1	Bromobenzene.
27497–51–4	Bromonaphthalene.
106–99–0	Butadiene.
106–98–9	1-butene.
123–86–4	n-butyl acetate.
141–32–2	n-butyl acrylate.
71–36–3	n-butyl alcohol.
78–92–2	s-butyl alcohol.
75–65–0	t-butyl alcohol.
109–73–9	n-butylamine.
13952–84–6	s-butylamine.
75–64–9	t-butylamine.
98–73–7	p-tert-butyl benzoic acid.
107–88–0	1,3-butylene glycol.
123–72–8	n-butyraldehyde.
107–92–6	Butyric acid.
106–31–0	Butyric anhydride.
109–74–0	Butyronitrile.
105–60–2	Caprolactam.
75–1–50	Carbon disulfide.
558–13–4	Carbon tetrabromide.
56–23–5	Carbon tetrachloride.
9004–35–7	Cellulose acetate.
79–11–8	Chloroacetic acid.
108–42–9	m-chloroaniline.
95–51–2	o-chloroaniline.
106–47–8	p-chloroaniline.
35913–09–8	Chlorobenzaldehyde.
108–90–7	Chlorobenzene.
118–91–2, 535–80–8, 74–11–3 [c].	Chlorobenzoic acid.
2136–81–4, 2136–89–2, 5216–25–1 [c].	Chlorobenzotrichloride.
1321–03–5	Chlorobenzoyl chloride.
25497–29–4	Chlorodifluoromethane.
75–45–6	Chlorodifluoroethane.
67–66–3	Chloroform.
25586–43–0	Chloronaphthalene.
88–73–3	o-chloronitrobenzene.
100–00–5	p-chloronitrobenzene.
25167–80–0	Chlorophenols.
126–99–8	Chloroprene.
7790–94–5	Chlorosulfonic acid.
108–41–8	m-chlorotoluene.
95–49–8	o-chlorotoluene.
106–43–4	p-chlorotoluene.
75–72–9	Chlorotrifluoromethane.
108–39–4	m-cresol.
95–48–7	o-cresol.
106–44–5	p-cresol.
1319–77–3	Mixed cresols.
1319–77–3	Cresylic acid.
4170–30–0	Crotonaldehyde.
3724–65–0	Crotonic acid.
98–82–8	Cumene.
80–15–9	Cumene hydroperoxide.
372–09–8	Cyanoacetic acid.
506–77–4	Cyanogen chloride.
108–80–5	Cyanuric acid.
108–77–0	Cyanuric chloride.
110–82–7	Cyclohexane.
108–93–0	Cyclohexanol.
108–94–1	Cyclohexanone.
110–83–8	Cyclohexene.
108–91–8	Cyclohexylamine.
111–78–4	Cyclooctadiene.

CAS No. [a]	Chemical
112–30–1	Decanol.
123–42–2	Diacetone alcohol.
27576–04–1	Diaminobenzoic acid.
95–76–1, 95–82–9, 554–00–7, 608–27–5, 608–31–1, 626–43–7, 27134–27–6, 57311–92–9 [c].	Dichloroaniline.
541–73–1	m-dichlorobenzene.
95–50–1	o-dichlorobenzene.
106–46–7	p-dichlorobenzene.
75–71–8	Dichlorodifluoromethane.
111–44–4	Dichloroethyl ether.
107–06–2	1,2-dichloroethane (EDC).
96–23–1	Dichlorohydrin.
26952–23–8	Dichloropropene.
101–83–7	Dicyclohexylamine.
109–89–7	Diethylamine.
111–46–6	Diethylene glycol.
112–36–7	Diethylene glycol diethyl ether.
111–96–6	Diethylene glycol dimethyl ether.
112–34–5	Diethylene glycol monobutyl ether.
124–17–4	Diethylene glycol monobutyl ether acetate.
111–90–0	Diethylene glycol monoethyl ether.
112–15–2	Diethylene glycol monoethyl ether acetate.
111–77–3	Diethylene glycol monomethyl ether.
64–67–5	Diethyl sulfate.
75–37–6	Difluoroethane.
25167–70–8	Diisobutylene.
26761–40–0	Diisodecyl phthalate.
27554–26–3	Diisooctyl phthalate.
674–82–8	Diketene.
124–40–3	Dimethylamine.
121–69–7	N,N-dimethylaniline.
115–10–6	N,N-dimethyl ether.
68–12–2	N,N-dimethylformamide.
57–14–7	Dimethylhydrazine.
77–78–1	Dimethyl sulfate.
75–18–3	Dimethyl sulfide.
67–68–5	Dimethyl sulfoxide.
120–61–6	Dimethyl terephthalate.
99–34–3	3,5-dinitrobenzoic acid.
51–28–5	Dinitrophenol.
25321–14–6	Dinitrotoluene.
123–91–1	Dioxane.
646–06–0	Dioxilane.
122–39–4	Diphenylamine.
101–84–8	Diphenyl oxide.
102–08–9	Diphenyl thiourea.
25265–71–8	Dipropylene glycol.
25378–22–7	Dodecene.
28675–17–4	Dodecylaniline.
27193–86–8	Dodecylphenol.
106–89–8	Epichlorohydrin.
64–17–5	Ethanol.
141–43–5 [c]	Ethanolamines.
141–78–6	Ethyl acetate.
141–97–9	Ethyl acetoacetate.
140–88–5	Ethyl acrylate.
75–04–7	Ethylamine.
100–41–4	Ethylbenzene.
74–96–4	Ethyl bromide.
9004–57–3	Ethylcellulose.
75–00–3	Ethyl chloride.
105–39–5	Ethyl chloroacetate.
105–56–6	Ethylcyanoacetate.
74–85–1	Ethylene.
96–49–1	Ethylene carbonate.
107–07–3	Ethylene chlorohydrin.
107–15–3	Ethylenediamine.
106–93–4	Ethylene dibromide.
107–21–1	Ethylene glycol.
111–55–7	Ethylene glycol diacetate.
110–71–4	Ethylene glycol dimethyl ether.
111–76–2	Ethylene glycol monobutyl ether.
112–07–2	Ethylene glycol monobutyl ether acetate.
110–80–5	Ethylene glycol monoethyl ether.
111–15–9	Ethylene glycol monethyl ether acetate.
109–86–4	Ethylene glycol monomethyl ether.
110–49–6	Ethylene glycol monomethyl ether acetate.
122–99–6	Ethylene glycol monophenyl ether.
2807–30–9	Ethylene glycol monopropyl ether.
75–21–8	Ethylene oxide.
60–29–7	Ethyl ether
104–76–7	2-ethylhexanol.
122–51–0	Ethyl orthoformate.
95–92–1	Ethyl oxalate.
41892–71–1	Ethyl sodium oxalacetate.
50–00–0	Formaldehyde.
75–12–7	Formamide.
64–18–6	Formic acid.
110–17–8	Fumaric acid.
98–01–1	Furfural.
56–81–5	Glycerol.
26545–73–7	Glycerol dichlorohydrin.
25791–96–2	Glycerol triether.
56–40–6	Glycine.
107–22–2	Glyoxal.
118–74–1	Hexachlorobenzene.
67–72–1	Hexachloroethane.
36653–82–4	Hexadecyl alcohol.
124–09–4	Hexamethylenediamine.
629–11–8	Hexamethylene glycol.
100–97–0	Hexamethylenetetramine.
74–90–8	Hydrogen cyanide.
123–31–9	Hydroquinone.
99–96–7	p-hydroxybenzoic acid.
26760–64–5	Isoamylene.
78–83–1	Isobutanol.
110–19–0	Isobutyl acetate.
115–11–7	Isobutylene.
78–84–2	Isobutyraldehyde.
79–31–2	Isobutyric acid.
25339–17–7	Isodecanol.
26952–21–6	Isooctyl alcohol.
78–78–4	Isopentane.
78–59–1	Isophorone.
121–91–5	Isophthalic acid.
78–79–5	Isoprene.
67–63–0	Isopropanol.
108–21–4	Isopropyl acetate.
75–31–0	Isopropylamine.
75–29–6	Isopropyl chloride.
25168–06–3	Isopropylphenol.
463–51–4	Ketene.
([b])	Linear alkyl sulfonate.
123–01–3	Linear alkylbenzene (linear dodecylbenzene).
110–16–7	Maleic acid.
108–31–6	Maleic anhydride.
6915–15–7	Malic acid.
141–79–7	Mesityl oxide.
121–47–1	Metanilic acid.
79–41–4	Methacrylic acid.
563–47–3	Methallyl chloride.
67–56–1	Methanol.
79–20–9	Methyl acetate.
105–45–3	Methyl acetoacetate.
74–89–5	Methylamine.
100–61–8	n-methylaniline.
74–83–9	Methyl bromide.
37365–71–2	Methyl butynol.
74–87–3	Methyl chloride.

CAS No. [a]	Chemical
108–87–2	Methylcyclohexane.
1331–22–2	Methylcyclohexanone.
75–09–2	Methylene chloride.
101–77–9	Methylene dianiline.
101–68–8	Methylene diphenyl diisocyanate.
78–93–3	Methyl ethyl ketone.
107–31–3	Methyl formate.
108–11–2	Methyl isobutyl carbinol.
108–10–1	Methyl isobutyl ketone.
80–62–6	Methyl methacrylate.
77–75–8	Methylpentynol.
98–83–9	a-methylstyrene.
110–91–8	Morpholine.
85–47–2	a-naphthalene sulfonic acid.
120–18–3	b-naphthalene sulfonic acid.
90–15–3	a-naphthol.
135–19–3	b-naphthol.
75–98–9	Neopentanoic acid.
88–74–4	o-nitroaniline.
100–01–6	p-nitroaniline.
91–23–6	o-nitroanisole.
100–17–4	p-nitroanisole.
98–95–3	Nitrobenzene.
27178–83–2[c]	Nitrobenzoic acid (o,m, and p).
79–24–3	Nitroethane.
75–52–5	Nitromethane.
88–75–5	2-Nitrophenol.
25322–01–4	Nitropropane.
1321–12–6	Nitrotoluene.
27215–95–8	Nonene.
25154–52–3	Nonylphenol.
27193–28–8	Octylphenol.
123–63–7	Paraldehyde.
115–77–5	Pentaerythritol.
109–66–0	n-pentane.
109–67–1	1-pentene
127–18–4	Perchloroethylene.
594–42–3	Perchloromethyl mercaptan.
94–70–2	o-phenetidine.
156–43–4	p-phenetidine.
108–95–2	Phenol.
98–67–9, 585–38–6, 609–46–1, 1333–39–7[c].	Phenolsulfonic acids.
91–40–7	Phenyl anthranilic acid.
([b])	Phenylenediamine.
75–44–5	Phosgene.
85–44–9	Phthalic anhydride.
85–41–6	Phthalimide.
108–99–6	b-picoline.
110–85–0	Piperazine.
9003–29–6, 25036–29–7[c].	Polybutenes.
25322–68–3	Polyethylene glycol.
25322–69–4	Polypropylene glycol.
123–38–6	Propionaldehyde.
79–09–4	Propionic acid.
71–23–8	n-propyl alcohol.
107–10–8	Propylamine.
540–54–5	Propyl chloride.
115–07–1	Propylene.
127–00–4	Propylene chlorohydrin.
78–87–5	Propylene dichloride.
57–55–6	Propylene glycol.
75–56–9	Propylene oxide.
110–86–1	Pyridine.
106–51–4	Quinone.
108–46–3	Resorcinol.
27138–57–4	Resorcylic acid.
69–72–7	Salicylic acid.
127–09–3	Sodium acetate.
532–32–1	Sodium benzoate.
9004–32–4	Sodium carboxymethyl cellulose.
3926–62–3	Sodium chloroacetate.
141–53–7	Sodium formate.
139–02–6	Sodium phenate.
110–44–1	Sorbic acid.
100–42–5	Styrene.
110–15–6	Succinic acid.
110–61–2	Succinonitrile.
121–57–3	Sulfanilic acid.
126–33–0	Sulfolane.
1401–55–4	Tannic acid.
100–21–0	Terephthalic acid.
79–34–5[c]	Tetrachloroethanes.
117–08–8	Tetrachlorophthalic anhydride.
78–00–2	Tetraethyl lead.
119–64–2	Tetrahydronaphthalene.
85–43–8	Tetrahydrophthalic anhydride.
75–74–1	Tetramethyl lead.
110–60–1	Tetramethylenediamine.
110–18–9	Tetramethylethylenediamine.
108–88–3	Toluene.
95–80–7	Toluene-2,4-diamine.
584–84–9	Toluene-2,4-diisocyanate.
26471–62–5	Toluene diisocyanates (mixture).
1333–07–9	Toluenesulfonamide.
104–15–4[c]	Toluenesulfonic acids.
98–59–9	Toluenesulfonyl chloride.
26915–12–8	Toluidines.
87–61–6, 108–70–3, 120–82–1[c].	Trichlorobenzenes.
71–55–6	1,1,1-trichloroethane.
79–00–5	1,1,2-trichloroethane.
79–01–6	Trichloroethylene.
75–69–4	Trichlorofluoromethane.
96–18–4	1,2,3-trichloropropane.
76–13–1	1,1,2-trichloro-1,2,2-trifluoroethane.
121–44–8	Triethylamine.
112–27–6	Triethylene glycol.
112–49–2	Triethylene glycol dimethyl ether.
7756–94–7	Triisobutylene.
75–50–3	Trimethylamine.
57–13–6	Urea.
108–05–4	Vinyl acetate.
75–01–4	Vinyl chloride.
75–35–4	Vinylidene chloride.
25013–15–4	Vinyl toluene.
1330–20–7	Xylenes (mixed).
95–47–6	o-xylene.
106–42–3	p-xylene.
1300–71–6	Xylenol.
1300–73–8	Xylidine.

[a] CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[b] No CAS number(s) have been assigned to this chemical, its isomers, or mixtures containing these chemicals.

[c] CAS numbers for some of the isomers are listed; the standards apply to all of the isomers and mixtures, even if CAS numbers have not been assigned.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

Subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

SOURCE: 72 FR 64883, Nov. 16, 2007, unless otherwise noted.

§ 60.480a Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in § 60.481a) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in § 60.486a(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in § 60.489 is exempt from §§ 60.482–1a through 60.482–11a.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§ 60.482–1a through 60.482–11a.

(4) Any affected facility that produces beverage alcohol is exempt from §§ 60.482–1a through 60.482–11a.

(5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§ 60.482–1a through 60.482–11a.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§ 60.482–1a through 60.487a for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §§ 60.485a(d), (e), and (f), and 60.486a(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(1)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

(2) *Part 63, subpart H.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 63, subpart H, to satisfy the requirements of §§ 60.482–1a through 60.487a for an affected facility. When choosing to comply with 40 CFR part 63, subpart H, the requirements of § 60.485a(d), (e), and (f), and § 60.486a(i) and (j) still apply.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 63, subpart H must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 63, subpart H, except that provisions required to be met prior to implementing 40 CFR part 63 still apply. Owners and operators who choose to comply with 40 CFR part 63, subpart H, must comply with 40 CFR part 63, subpart A.

(f) *Stay of standards.* (1) Owners or operators that start a new, reconstructed, or modified affected source prior to November 16, 2007 are not required to comply with the requirements in this

paragraph until EPA takes final action to require compliance and publishes a document in the FEDERAL REGISTER.

(i) The definition of ''capital expenditure'' in §60.481a of this subpart. While the definition of ''capital expenditure'' is stayed, owners or operators should use the definition found in §60.481 of subpart VV of this part.

(ii) [Reserved]

(2) Owners or operators are not required to comply with the requirements in this paragraph until EPA takes final action to require compliance and publishes a document in the FEDERAL REGISTER.

(i) The definition of ''process unit'' in §60.481a of this subpart. While the definition of ''process unit'' is stayed, owners or operators should use the following definition:

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

(ii) The method of allocation of shared storage vessels in §60.482–1a(g) of this subpart.

(iii) The standards for connectors in gas/vapor service and in light liquid service in §60.482–11a of this subpart.

[72 FR 64883, Nov. 16, 2007, as amended at 73 FR 31375, June 2, 2008]

§60.481a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA) or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where:

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$$A = Y \times (B \div 100);$$

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 2006 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

TABLE FOR DETERMINING APPLICABLE VALUE FOR B

Subpart applicable to facility	Value of B to be used in equation
VVa	12.5
GGGa	7.0

Closed-loop system means an enclosed system that returns process fluid to the process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers for purged liquids 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 to a process.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

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, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any 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 using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, P.O. Box 2300, Fairfield, NJ 07007–2300).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

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 § 60.485a(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) (0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of § 60.485a(d) specify how to determine that a piece of equipment is not in VOC service.)

Initial calibration value means the concentration measured during the initial calibration at the beginning of each day required in § 60.485a(b)(1), or the most recent calibration if the instrument is recalibrated during the day (i.e., the calibration is adjusted) after a calibration drift assessment.

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in § 60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in 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 accomplished. The following are not considered process unit shutdowns:

(1) 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.

(2) 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.

(3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§ 60.482–2a(b)(2)(ii) and (d)(6)(ii) and (d)(6)(iii), 60.482–3a(f), and 60.482–10a(f)(1)(ii), is re-monitored as specified in § 60.485a(b) to verify that emissions from the equipment are below the applicable leak definition.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

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 nonroutine grab samples is not considered a sampling connection system.

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.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges or ships.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in § 60.489.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in § 60.2 Definitions.

EFFECTIVE DATE NOTE: At 73 FR 31376, June 2, 2008, in § 60.481a, the definitions of ''capital expenditure'' and ''process unit'' were stayed until further notice.

§ 60.482–1a Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§ 60.482–1a through 60.482–10a or § 60.480a(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§ 60.482–1a to 60.482–10a will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.485a.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§ 60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, and 60.482–10a as provided in § 60.484a.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§ 60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, or 60.482–10a, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§ 60.482–2a through 60.482–10a if it is identified as required in § 60.486a(e)(5).

(e) Equipment that an owner or operator designates as being in VOC service less than 300 hr/yr is excluded from the requirements of §§ 60.482–2a through 60.482–11a if it is identified as required in § 60.486a(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.

(2) The equipment is in VOC service only during process malfunctions or other emergencies.

(3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.

(f)(1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps, valves, and open-ended valves or lines at the frequency specified in the following table instead of monitoring as specified in §§ 60.482–2a, 60.482–7a, and 60.483.2a:

Operating time (percent of hours during year)	Equivalent 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 quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time 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. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.

(i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.

(ii) When monitoring is conducted semiannually (*i.e.*, once every 2 quarters), monitoring events must be separated by at least 60 calendar days.

(iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.

(iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.

(g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VV of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

EFFECTIVE DATE NOTE: At 73 FR 31376, June 2, 2008, in § 60.482–1a, paragraph (g) was stayed until further notice.

§ 60.482–2a Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in § 60.485a(b), except as provided in § 60.482–1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump

that replaces a leaking pump and except as provided in §60.482–1a(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in §60.482–1a(f).

(b)(1) The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.

(i) 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;

(ii) 2,000 ppm or greater for all other pumps.

(2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.

(i) Monitor the pump within 5 days as specified in §60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.

(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.

(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 §60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.

(i) Tightening the packing gland nuts;

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Each pump 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 (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 pump stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10a; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or 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)(i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section prior to the next required inspection.

(A) Monitor the pump within 5 days as specified in §60.485a(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 2,000 ppm or greater is measured, a leak is detected.

(B) Designate the visual indications of liquids dripping as a leak.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm.

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.

(6)(i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.

(ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.

(iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.

(e) Any pump that is designated, as described in § 60.486a(e)(1) and (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) of this section 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 methods specified in § 60.485a(c); and

(3) Is tested for compliance with paragraph (e)(2) of this section 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 process or to a fuel gas system or to a control device that complies with the requirements of § 60.482–10a, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in § 60.486a(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) 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 practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) 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) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

§ 60.482–3a Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in § 60.482–1a(c) and paragraphs (h), (i), and (j) 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 degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of § 60.482–10a; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) 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.

(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 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 § 60.482–9a.

(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) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of § 60.482–10a, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in § 60.486a(e)(1) and (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) through (h) of this section 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 methods specified in § 60.485a(c); 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.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from paragraphs (a) through (e) and (h) of this section, provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

§ 60.482–4a 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 determined by the methods specified in § 60.485a(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 the pressure release, except as provided in § 60.482–9a.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in § 60.485a(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in § 60.482–10a is exempted 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 new 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 § 60.482–9a.

§ 60.482–5a 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 § 60.482–1a(c) and paragraph (c) of this section.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section.

(1) Gases displaced during filling of the sample container are not required to be collected or captured.

(2) Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied.

(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.

(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section.

(i) Return the purged process fluid directly to the process line.

(ii) Collect and recycle the purged process fluid to a process.

(iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of § 60.482–10a.

(iv) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(A) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266;

(C) 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;

(D) A waste management unit subject to and operated in compliance with the treatment requirements of 40 CFR 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of 40 CFR 61.343 through 40 CFR 61.347; or

(E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is 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.

§ 60.482–6a 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 § 60.482–1a(c) 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.

(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) 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 paragraphs (a) through (c) of this section.

§ 60.482–7a Standards: Valves in gas/vapor service and in light liquid service.

(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in § 60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1a(c) and (f), and §§ 60.483–1a and 60.483–2a.

(2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, § 60.482–1a(c), and §§ 60.483–1a and 60.483–2a.

(i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.

(ii) If the existing valves in the process unit are monitored in accordance with § 60.483–1a or § 60.483–2a, count the new valve as leaking when calculating the percentage of valves leaking as described in § 60.483–2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

(b) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(c)(1)(i) 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.

(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

(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 § 60.482–9a.

(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;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in § 60.486a(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) of this section 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 determined by the method specified in § 60.485a(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in § 60.486a(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section 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) of this section, and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in § 60.486a(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) of this section 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 either:

(i) Becomes an affected facility through § 60.14 or § 60.15 and was constructed on or before January 5, 1981; or

(ii) Has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 60.482–8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in § 60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

(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 § 60.482–9a.

(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 §§ 60.482–2a(c)(2) and 60.482–7a(e).

§ 60.482–9a Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves and connectors 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 § 60.482–10a.

(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.

(f) When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

§ 60.482–10a 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.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of § 60.18.

(e) Owners or operators of control devices 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 designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (ii) of this section:

(i) Conduct an initial inspection according to the procedures in § 60.485a(b); 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 § 60.485a(b); and

(ii) Conduct annual inspections according to the procedures in § 60.485a(b).

(g) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) 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.

(h) 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.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:

(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 (f)(1)(i) 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.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements

specified in paragraphs (k)(1) through (3) of this section:

(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 process unit within which the closed vent system is located becomes an affected facility through §§ 60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (5) of this section.

(1) Identification of all parts of the closed vent system 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 closed vent system 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 inspection during which a leak is detected, a record of the information specified in § 60.486a(c).

(4) For each inspection conducted in accordance with § 60.485a(b) 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.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(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.

(m) 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.

§ 60.482–11a Standards: Connectors in gas/vapor service and in light liquid service.

(a) The owner or operator shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.

(b) Except as allowed in § 60.482–1a(c), § 60.482–10a, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in § 60.485a(b) and, as applicable, § 60.485a(c).

(2) If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.

(3) The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.

(i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).

(ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5

percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.

(iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.

(A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.

(B) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent of leaking connectors within the total monitored connectors.

(C) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.

(iv) If, during the monitoring conducted pursuant to paragraphs (b)(3)(i) through (iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.

(v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.

(c) For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:

$$\%C_L = C_L / C_t * 100$$

Where:

$\%C_L$ = Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.

C_L = Number of connectors measured at 500 ppm or greater, by the method specified in § 60.485a(b).

C_t = Total number of monitored connectors in the process unit or affected facility.

(d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.

(e) Any connector that is designated, as described in § 60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:

(1) The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and

(2) The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (d) of this section if a leak is detected.

(f) *Inaccessible, ceramic, or ceramic-lined connectors.* (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§ 63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:

(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 that 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 (7 feet) 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, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

(g) Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors 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.

EFFECTIVE DATE NOTE: At 73 FR 31376, June 2, 2008, § 60.482–11a was stayed until further notice.

§ 60.483–1a Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect 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 wishes 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 comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in § 60.487a(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 § 60.482–7a(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in § 60.485a(b).

(2) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in § 60.485a(h).

§ 60.483–2a Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect 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 § 60.487(d)a.

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in § 60.482–7a.

(2) After 2 consecutive quarterly leak detection periods with the percent 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 gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent 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 gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in § 60.482–7a but can again elect to use this section.

(5) The percent of valves leaking shall be determined as described in § 60.485a(h).

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

(7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with § 60.482–7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

§ 60.484a Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

(2) The Administrator will compare test data for demonstrating equivalence of the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the approval of equivalence 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) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent 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 approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the

FEDERAL REGISTER and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the FEDERAL REGISTER.

(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the CAA.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

§ 60.485a Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§ 60.482–1a through 60.482–11a, 60.483a, and 60.484a as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A–7 of this part. The following calibration gases shall be used:

(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 no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. 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 ppm 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 ppm. 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.

(2) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in § 60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be remonitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

(c) The owner or operator shall determine compliance with the no-detectable-emission standards in §§ 60.482–2a(e), 60.482–3a(i), 60.482–4a, 60.482–7a(f), and 60.482–10a(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 of appendix A–7 of this part shall be used to determine the

background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d)(1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 of appendix A–7 of this part shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec).

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units) = 28.56 ft/sec (English units).

K_2 = 0.7084 m^4/(MJ-sec) (metric units) = 0.087 ft^4/(Btu-sec) (English units).

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units).

C_i = Concentration of sample component ''i,'' ppm

H_i = net heat of combustion of sample component ''i'' at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole.

(5) Method 18 of appendix A–6 of this part or ASTM D6420–99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420–99, and the target concentration is between 150 parts per billion by volume and 100 ppmv) and ASTM D2504–67, 77, or 88 (Reapproved 1993) (incorporated by reference-see §60.17) shall be used to determine the concentration of sample component ''i.''

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference-see § 60.17) shall be used to determine the net heat of combustion of component ''i'' if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D of appendix A–7 of this part, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

(h) The owner or operator shall determine compliance with § 60.483–1a or § 60.483–2a as follows:

(1) The percent of valves leaking shall be determined using the following equation:

$$\%V_L = (V_L / V_T) * 100$$

Where:

$\%V_L$ = Percent leaking valves.
V_L = Number of valves found leaking.
V_T = The sum of the total number of valves monitored.

(2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.

(3) The number of valves leaking shall include valves for which repair has been delayed.

(4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.

(5) If the process unit has been subdivided in accordance with § 60.482–7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.

(6) The total number of valves monitored does not include a valve monitored to verify repair.

§ 60.486a 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 affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(3) The owner or operator shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§ 60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a.

(i) Monitoring instrument identification.

(ii) Operator identification.

(iii) Equipment identification.

(iv) Date of monitoring.

(v) Instrument reading.

(b) When each leak is detected as specified in §§ 60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, 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 § 60.482–7a(c) and no leak has been detected during those 2 months.

(3) The identification on a connector may be removed after it has been monitored as specified in § 60.482–11a(b)(3)(iv) and no leak has been detected during that monitoring.

(4) The identification on equipment, except on a valve or connector, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§ 60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, 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, except when indications of liquids dripping from a pump are designated as a leak.

(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) Maximum instrument reading measured by Method 21 of appendix A–7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.

(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 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 §60.482–10a 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 §60.482–10a(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 §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a 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 §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a.

(e) The following information pertaining to all equipment subject to the requirements in §§60.482–1a to 60.482–11a shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2a(e), 60.482–3a(i), and 60.482–7a(f).

(ii) The designation of equipment as subject to the requirements of §60.482–2a(e), §60.482–3a(i), or §60.482–7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.

(3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4a.

(4)(i) The dates of each compliance test as required in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, and 60.482–7a(f).

(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.

(6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482–1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.

(7) The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.

(8) Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A–7 of this part and §60.485a(b).

(i) Date of calibration and initials of operator performing the calibration.

(ii) Calibration gas cylinder identification, certification date, and certified concentration.

(iii) Instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A–7 of this part.

(v) Results of each calibration drift assessment required by §60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).

(vi) If an owner or operator makes their own calibration gas, a description of the procedure used.

(9) The connector monitoring schedule for each process unit as specified in § 60.482–11a(b)(3)(v).

(10) Records of each release from a pressure relief device subject to § 60.482–4a.

(f) The following information pertaining to all valves subject to the requirements of § 60.482–7a(g) and (h), all pumps subject to the requirements of § 60.482–2a(g), and all connectors subject to the requirements of § 60.482–11a(e) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves, pumps, and connectors that are designated as unsafe-to-monitor, an explanation for each valve, pump, or connector stating why the valve, pump, or connector is unsafe-to-monitor, and the plan for monitoring each valve, pump, or connector.

(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 schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with § 60.483–2a:

(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 §§ 60.482–2a(d)(5) and 60.482–3a(e)(2) and 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 § 60.480a(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of § 60.7(b) and (d) do not apply to affected facilities subject to this subpart.

§ 60.487a Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of § 60.482–7a, excluding those valves designated for no detectable emissions under the provisions of § 60.482–7a(f).

(3) Number of pumps subject to the requirements of § 60.482–2a, excluding those pumps designated for no detectable emissions under the provisions of § 60.482–2a(e) and those pumps complying with § 60.482–2a(f).

(4) Number of compressors subject to the requirements of § 60.482–3a, excluding those compressors designated for no detectable emissions under the provisions of § 60.482–3a(i) and those compressors complying with § 60.482–3a(h).

(5) Number of connectors subject to the requirements of § 60.482–11a.

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in § 60.486a:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in § 60.482–7a(b) or § 60.483–2a,

(ii) Number of valves for which leaks were not repaired as required in § 60.482–7a(d)(1),

(iii) Number of pumps for which leaks were detected as described in § 60.482–2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),

(iv) Number of pumps for which leaks were not repaired as required in § 60.482–2a(c)(1) and (d)(6),

(v) Number of compressors for which leaks were detected as described in § 60.482–3a(f),

(vi) Number of compressors for which leaks were not repaired as required in § 60.482–3a(g)(1),

(vii) Number of connectors for which leaks were detected as described in § 60.482–11a(b)

(viii) Number of connectors for which leaks were not repaired as required in § 60.482–11a(d), and

(ix)–(x) [Reserved]

(xi) The facts that explain each delay of repair 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 (b) of this section if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§ 60.483–1a or 60.483–2a shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with § 60.8 of the General Provisions. The provisions of § 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.

§ 60.488a Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital costs that would be required to construct a comparable new facility'' under § 60.15: Pump seals, nuts and bolts, rupture disks, and packings.

(b) Under § 60.15, the ''fixed capital cost of new components'' includes the fixed capital cost of all depreciable components (except components specified in § 60.488a(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the ''Applicability and designation of affected facility'' section of the appropriate subpart.) For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.489a List of chemicals produced by affected facilities.

Process units that produce, as intermediates or final products, chemicals listed in § 60.489 are covered under this subpart. The applicability date for process units producing one or more of these chemicals is November 8, 2006.

Subpart WW—Standards of Performance for the Beverage Can Surface Coating Industry

SOURCE: 48 FR 38737, Aug. 25, 1983, unless otherwise noted.

§ 60.490 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in beverage can surface coating lines: each exterior base coat operation, each overvarnish coating operation, and each inside spray coating operation.

(b) The provisions of this subpart apply to each affected facility which is

identified in paragraph (a) of this section and commences construction, modification, or reconstruction after November 26, 1980.

§ 60.491 Definitions.

(a) All terms which are used in this subpart and are not defined below are given the same meaning as in the Act and subpart A of this part.

(1) *Beverage can* means any two-piece steel or aluminum container in which soft drinks or beer, including malt liquor, are packaged. The definition does not include containers in which fruit or vegetable juices are packaged.

(2) *Exterior base coating operation* means the system on each beverage can surface coating line used to apply a coating to the exterior of a two-piece beverage can body. The exterior base coat provides corrosion resistance and a background for lithography or printing operations. The exterior base coat operation consists of the coating application station, flashoff area, and curing oven. The exterior base coat may be pigmented or clear (unpigmented).

(3) *Inside spray coating operation* means the system on each beverage can surface coating line used to apply a coating to the interior of a two-piece beverage can body. This coating provides a protective film between the contents of the beverage can and the metal can body. The inside spray coating operation consists of the coating application station, flashoff area, and curing oven. Multiple applications of an inside spray coating are considered to be a single coating operation.

(4) *Overvarnish coating operation* means the system on each beverage can surface coating line used to apply a coating over ink which reduces friction for automated beverage can filling equipment, provides gloss, and protects the finished beverage can body from abrasion and corrosion. The overvarnish coating is applied to two-piece beverage can bodies. The overvarnish coating operation consists of the coating application station, flashoff area, and curing oven.

(5) *Two-piece can* means any beverage can that consists of a body manufactured from a single piece of steel or aluminum and a top. Coatings for a two-piece can are usually applied after fabrication of the can body.

(6) *VOC content* means all volatile organic compounds (VOC) that are in a coating. VOC content is expressed in terms of kilograms of VOC per liter of coating solids.

(b) Notations used under § 60.493 of this subpart are defined below:

C_a=the VOC concentration in each gas stream leaving the control device and entering the atmosphere (parts per million as carbon)

C_b=the VOC concentration in each gas stream entering the control device (parts per million as carbon)

D_c=density of each coating, as received (kilograms per liter)

D_d=density of each VOC-solvent added to coatings (kilograms per liter)

D_r=density of VOC-solvent recovered by an emission control device (kilograms per liter)

E=VOC destruction efficiency of the control device (fraction)

F=the proportion of total VOC emitted by an affected facility which enters the control device to total emissions (fraction)

G=the volume-weighted average of VOC in coatings consumed in a calendar month per volume of coating solids applied (kilograms per liter of coating solids)

H_c=the fraction of VOC emitted at the coater and flashoff areas captured by a collection system

H_h=the fraction of VOC emitted at the cure oven captured by a collection system

L_c=the volume of each coating consumed, as received (liters)

L_d=the volume of each VOC-solvent added to coatings (liters)

L_r=the volume of VOC-solvent recovered by an emission control device (liters)

L_s=the volume of coating solids consumed (liters)

M_d=the mass of VOC-solvent added to coatings (kilograms)

M_o=the mass of VOC-solvent in coatings consumed, as received (kilograms)

M_r=the mass of VOC-solvent recovered by emission control device (kilograms)

N=the volume-weighted average mass of VOC emissions to atmosphere per unit volume of coating solids applied (kilograms per liter of coating solids)

Q_a=the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere (dry standard cubic meters per hour)

Q_b=the volumetric flow of each gas stream entering the control device (dry standard cubic meters per hour)

R=the overall emission reduction efficiency for an affected facility (fraction)

S_e=the fraction of VOC in coating and diluent VOC-solvent emitted at the coater and flashoff area for a coating operation

S_h=the fraction of VOC in coating and diluent solvent emitted at the cure oven for a coating operation

V_s=the proportion of solids in each coating, as received (fraction by volume)

W_o=the proportion of VOC in each coating, as received (fraction by weight).

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§ 60.492 Standards for volatile organic compounds.

On or after the date on which the initial performance test required by § 60.8(a) is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge of VOC emissions to the atmoshpere that exceed the following volume-weighted calendar-month average emissions:

(a) 0.29 kilogram of VOC per litre of coating solids from each two-piece can exterior base coating operation, except clear base coat;

(b) 0.46 kilogram of VOC per litre of coating solids from each two-piece can clear base coating operation and from each overvarnish coating operation; and

(c) 0.89 kilogram of VOC per litre of coating solids from each two-piece can inside spray coating operation.

§ 60.493 Performance test and compliance provisions.

(a) Section 60.8(d) does not apply to monthly performance tests and § 60.8(f) does not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility.

(1) The owner or operator shall use the following procedures for each affected facility that does not use a capture system and a control device to comply with the emission limit specified under § 60.492. The owner or operator shall determine the VOC-content of the coatings from formulation data supplied by the manufacturer of the coating or by an analysis of each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine the VOC content of coatings using Method 24 or an equivalent or alternative method. The owner or operator shall determine from company records the volume of coating and the mass of VOC-solvent added to coatings. If a common coating distribution system serves more than one affected facility or serves both affected and exiting facilities, the owner or operator shall estimate the volume of coating used at each facility by using the average dry weight of coating, number of cans, and size of cans being processed by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Calculate the volume-weighted average of the total mass of VOC per volume of coating solids used during the calendar month for each affected facility, except as provided under paragraph (b)(1)(iv) of this section. The volume-weighted average of the total mass of VOC per volume of coating solids used each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC used (M_o+M_d) during the calendar month for the affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}, \qquad (1)$$

[$\Sigma L_{dj} D_{dj}$ will be 0 if no VOC solvent is added to the coatings, as received.] where n is the number of different coatings used during the calendar month and m is the number of different diluent VOC-solvents used during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in the calendar month for the affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}, \qquad (2)$$

where n is the number of different coatings used during the calendar month.

(C) Calculate the volume-weighted average mass of VOC per volume of solids used (G) during the calendar month for the affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s} \qquad (3)$$

(ii) Calculate the volume-weighted average of VOC emissions discharged to the atmosphere (N) during the calendar month for the affected facility by the following equation:

$$N = G. \qquad (4)$$

(iii) Where the value of the volume-weighted average mass of VOC per volume of solids discharged to the atmosphere (N) is equal to or less than the applicable emission limit specified under § 60.492, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content equal to or less than the limit specified under § 60.492, the affected facility is in compliance provided no VOC-solvents are added to the coating during distribution or application.

(2) An owner or operator shall use the following procedures for each affected facility that uses a capture system and a control device that destroys VOC (e.g., incinerator) to comply with the emission limit specified under § 60.492.

(i) Determine the overall reduction efficiency (R) for the capture system and control device.

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed in paragraphs (b)(2)(i) (A), (B), and (C) of this section. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency for the performance test providing control device and capture system operating conditions have not changed. The procedure in paragraphs (b)(2)(i), (A), (B), and (C) of this section, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC used by the affected facility that enters the control device using the following equation:

$$F = S_e H_e + S_h H_h, \qquad (5)$$

where H_e an H_h shall be determined by a method that has been previously approved by the Administrator. The owner or operator may use the values of S_e and S_h specified in table 1 or other values determined by a method that has been previously approved by the Administrator.

TABLE 1—DISTRIBUTION OF VOC EMISSIONS

Coating operation	Emission distribution	
	Coater/flashoff (S_e)	Curing oven (S_h)
Two-piece aluminum or steel can:		
Exterior base coat operation	0.75	0.25
Overvarnish coating operation ...	0.75	0.25
Inside spray coating operation ...	0.80	0.20

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}, \qquad (6)$$

where n is the number of vents before the control device, and m is the number of vents after the control device.

(C) Determine overall reduction efficiency (R) using the following equation:

$$R = EF \qquad (7)$$

(ii) Calculate the volume-weighted average of the total mass of VOC per

volume of coating solids (G) used during the calendar month for the affected facility using equations (1), (2), and (3).

(iii) Calculate the volume-weighted average of VOC emissions discharged to the atmosphere (N) during the calendar month by the following equation:

$$N = G \times [1 - R] \qquad (8)$$

(iv) If the volume-weighted average of mass of VOC emitted to the atmosphere for the calendar month (N) is equal to or less than the applicable emission limit specified under § 60.492, the affected facility is in compliance.

(3) An owner or operator shall use the following procedure for each affected facility that uses a capture system and a control device that recovers the VOC (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.492.

(i) Calculate the volume-weighted average of the total mass of VOC per unit volume of coating solids applied (G) used during the calendar month for the affected facility using equations (1), (2), and (3).

(ii) Calculate the total mass of VOC recovered (M_r) during each calendar month using the following equation:

$$M_r = L_r D_r \qquad (9)$$

(iii) Calculate overall reduction efficiency of the control device (R) for the calendar month for the affected facility using the following equation:

$$R = \frac{M_r}{M_o + M_d} \qquad (10)$$

(iv) Calculate the volume-weighted average mass of VOC discharged to the atmosphere (N) for the calendar month for the afffected facility using equation (8).

(v) If the weighted average of VOC emitted to the atmosphere for the calendar month (N) is equal to or less than the applicable emission limit specified under § 60.492, the affected facility is in compliance.

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§ 60.494 Monitoring of emissions and operations.

The owner or operator of an affected facility that uses a capture system and an incinerator to comply with the emission limits specified under § 60.492 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below.

(a) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, temperature measurement devices shall be installed in the gas stream immediately before and after the catalyst bed.

(b) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of 0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(c) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§ 60.495 Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility shall include the following data in the initial compliance report required under § 60.8(a).

(1) Where only coatings which individually have a VOC content equal to or less than the limits specified under § 60.492 are used, and no VOC is added to the coating during the application or distribution process, the owner or operator shall provide a list of the coatings used for each affected facility and the VOC content of each coating calculated from data determined using Method 24 or supplied by the manufacturers of the coatings.

(2) Where one or more coatings which individually have a VOC content greater than the limits specified under § 60.492 are used or where VOC are added or used in the coating process, the owner or operator shall report for each affected facility the volume-weighted average of the total mass of VOC per volume of coating solids.

(3) Where compliance is achieved through the use of incineration, the owner or operator shall include in the initial performance test required under § 60.8(a) the combustion temperature (or the gas temperature upstream and downstream of the catalyst bed), the total mass of VOC per volume of coating solids before and after the incinerator, capture efficiency, and the destruction efficiency of the incinerator used to attain compliance with the applicable emission limit specified under § 60.492. The owner or operator shall also include a description of the method used to establish the amount of VOC captured by the capture system and sent to the control device.

(b) Following the initial performance test, each owner or operator shall identify, record, and submit quarterly reports to the Administrator of each instance in which the volume-weighted average of the total mass of VOC per volume of coating solids, after the control device, if capture devices and control systems are used, is greater than the limit specified under § 60.492. If no such instances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit at the frequency specified in § 60.7(c) the following:

(1) Where compliance with § 60.492 is achieved through the use of thermal incineration, each 3-hour period when cans are processed, during which the average temperature of the device was more than 28 °C below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under § 60.493.

(2) Where compliance with § 60.492 is achieved through the use of catalytic incineration, each 3-hour period when cans are being processed, during which the average temperature of the device immediately before the catalyst bed is more than 28 °C below the average temperature of the device immediately before the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under § 60.493 and all 3-hour periods, when cans are being processed, during which 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 at which destruction efficiency was determined as specified under § 60.494.

(3) For thermal and catalytic incinerators, if no such periods as described in paragraphs (c)(1) and (c)(2) of this section occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine VOC emissions from each affected facility in the initial and monthly performance tests. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain, at the source, daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the amount of solvent recovered by the system for each affected facility.

(e) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[47 FR 49612, Nov. 1, 1982, as amended at 55 FR 51384, Dec. 13, 1990; 65 FR 61763, Oct. 17, 2000]

§ 60.496 Test methods and procedures.

(a) The reference methods in appendix A to this part, except as provided in § 60.8, shall be used to conduct performance tests.

(1) Method 24, an equivalent or alternative method approved by the Administrator, or manufacturers' formulation data from which the VOC content of the coatings used for each affected facility can be calculated. In the event of a dispute, Method 24 data shall govern. When VOC content of water-borne coatings, determined from data generated by Method 24, is used to determine compliance of affected facilities, the results of the Method 24 analysis shall be adjusted as described in Section 12.6 of Method 24.

(2) Method 25 or an equivalent or alternative method for the determination of the VOC concentration in the effluent gas entering and leaving the control device for each stack equipped with an emission control device. The owner or operator shall notify the Administrator at least 30 days in advance of any State test using Method 25. The following reference methods are to be used in conjunction with Method 25:

(i) Method 1 for sample and velocity traverses,

(ii) Method 2 for velocity and volumetric flow rate,

(iii) Method 3 for gas analysis, and

(iv) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-litre sample collected in a 1-litre container at a point where the sample will be representative of the coating material.

(c) For Method 25, the sampling time for each of three runs must be at least 1 hour. The minimum sample volume must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator. The Administrator will approve the sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

Subpart XX—Standards of Performance for Bulk Gasoline Terminals

SOURCE: 48 FR 37590, Aug. 18, 1983, unless otherwise noted.

§ 60.500 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is the total of all the loading racks at a bulk gasoline terminal which deliver liquid product into gasoline tank trucks.

(b) Each facility under paragraph (a) of this section, the construction or modification of which is commenced after December 17, 1980, is subject to the provisions of this subpart.

(c) For purposes of this subpart, any replacement of components of an existing facility, described in paragraph (a) of this section, commenced before August 18, 1983 in order to comply with any emission standard adopted by a State or political subdivision thereof will not be considered a reconstruction under the provisions of 40 CFR 60.15.

NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technologies (BDT). The numerical emission limits in this standard are expressed in terms of total organic compounds. This emission limit reflects the performance of BDT.

§ 60.501 Definitions.

The terms used in this subpart are defined in the Clean Air Act, in § 60.2 of this part, or in this section as follows:

Bulk gasoline terminal means any gasoline facility which receives gasoline by pipeline, ship or barge, and has a gasoline throughput greater than 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State or local law and discoverable by the Administrator and any other person.

Continuous vapor processing system means a vapor processing system that treats total organic compounds vapors collected from gasoline tank trucks on a demand basis without intermediate accumulation in a vapor holder.

Existing vapor processing system means a vapor processing system [capable of

achieving emissions to the atmosphere no greater than 80 milligrams of total organic compounds per liter of gasoline loaded], the construction or refurbishment of which was commenced before December 17, 1980, and which was not constructed or refurbished after that date.

Flare means a thermal oxidation system using an open (without enclosure) flame.

Gasoline means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater which is used as a fuel for internal combustion engines.

Gasoline tank truck means a delivery tank truck used at bulk gasoline terminals which is loading gasoline or which has loaded gasoline on the immediately previous load.

Intermittent vapor processing system means a vapor processing system that employs an intermediate vapor holder to accumulate total organic compounds vapors collected from gasoline tank trucks, and treats the accumulated vapors only during automatically controlled cycles.

Loading rack means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill delivery tank trucks.

Refurbishment means, with reference to a vapor processing system, replacement of components of, or addition of components to, the system within any 2-year period such that the fixed capital cost of the new components required for such component replacement or addition exceeds 50 percent of the cost of a comparable entirely new system.

Thermal oxidation system means a combustion device used to mix and ignite fuel, air pollutants, and air to provide a flame to heat and oxidize hazardous air pollutants. Auxiliary fuel may be used to heat air pollutants to combustion temperatures.

Total organic compounds means those compounds measured according to the procedures in § 60.503.

Vapor collection system means any equipment used for containing total organic compounds vapors displaced during the loading of gasoline tank trucks.

Vapor processing system means all equipment used for recovering or oxidizing total organic compounds vapors displaced from the affected facility.

Vapor-tight gasoline tank truck means a gasoline tank truck which has demonstrated within the 12 preceding months that its product delivery tank will sustain a pressure change of not more than 750 pascals (75 mm of water) within 5 minutes after it is pressurized to 4,500 pascals (450 mm of water). This capability is to be demonstrated using the pressure test procedure specified in Method 27.

[48 FR 37590, Aug. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 68 FR 70965, Dec. 19, 2003]

§ 60.502 Standard for Volatile Organic Compound (VOC) emissions from bulk gasoline terminals.

On and after the date on which § 60.8(a) requires a performance test to be completed, the owner or operator of each bulk gasoline terminal containing an affected facility shall comply with the requirements of this section.

(a) Each affected facility shall be equipped with a vapor collection system designed to collect the total organic compounds vapors displaced from tank trucks during product loading.

(b) The emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 35 milligrams of total organic compounds per liter of gasoline loaded, except as noted in paragraph (c) of this section.

(c) For each affected facility equipped with an existing vapor processing system, the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 80 milligrams of total organic compounds per liter of gasoline loaded.

(d) Each vapor collection system shall be designed to prevent any total organic compounds vapors collected at one loading rack from passing to another loading rack.

(e) Loadings of liquid product into gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the following procedures:

(1) The owner or operator shall obtain the vapor tightness documentation described in § 60.505(b) for each gasoline tank truck which is to be loaded at the affected facility.

(2) The owner or operator shall require the tank identification number to be recorded as each gasoline tank truck is loaded at the affected facility.

(3)(i) The owner or operator shall cross-check each tank identification number obtained in paragraph (e)(2) of this section with the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded, unless either of the following conditions is maintained:

(A) If less than an average of one gasoline tank truck per month over the last 26 weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed each quarter; or

(B) If less than an average of one gasoline tank truck per month over the last 52 weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed semiannually.

(ii) If either the quarterly or semiannual cross-check provided in paragraphs (e)(3)(i) (A) through (B) of this section reveals that these conditions were not maintained, the source must return to biweekly monitoring until such time as these conditions are again met.

(4) The terminal owner or operator shall notify the owner or operator of each non-vapor-tight gasoline tank truck loaded at the affected facility within 1 week of the documentation cross-check in paragraph (e)(3) of this section.

(5) The terminal owner or operator shall take steps assuring that the non-vapor-tight gasoline tank truck will not be reloaded at the affected facility until vapor tightness documentation for that tank is obtained.

(6) Alternate procedures to those described in paragraphs (e)(1) through (5) of this section for limiting gasoline tank truck loadings may be used upon application to, and approval by, the Administrator.

(f) The owner or operator shall act to assure that loadings of gasoline tank trucks at the affected facility are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system.

(g) The owner or operator shall act to assure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the affected facility. Examples of actions to accomplish this include training drivers in the hookup procedures and posting visible reminder signs at the affected loading racks.

(h) The vapor collection and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading. This level is not to be exceeded when measured by the procedures specified in § 60.503(d).

(i) No pressure-vacuum vent in the bulk gasoline terminal's vapor collection system shall begin to open at a system pressure less than 4,500 pascals (450 mm of water).

(j) Each calendar month, the vapor collection system, the vapor processing system, and each loading rack handling gasoline shall be inspected during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this paragraph, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected.

[48 FR 37590, Aug. 18, 1983; 48 FR 56580, Dec. 22, 1983, as amended at 54 FR 6678, Feb. 14, 1989; 64 FR 7466, Feb. 12, 1999]

§ 60.503 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). The three-run requirement of § 60.8(f) does not apply to this subpart.

(b) Immediately before the performance test required to determine compliance with § 60.502 (b), (c), and (h), the owner or operator shall use Method 21

to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded. The owner or operator shall repair all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test.

(c) The owner or operator shall determine compliance with the standards in § 60.502 (b) and (c) as follows:

(1) The performance test shall be 6 hours long during which at least 300,000 liters of gasoline is loaded. If this is not possible, the test may be continued the same day until 300,000 liters of gasoline is loaded or the test may be resumed the next day with another complete 6-hour period. In the latter case, the 300,000-liter criterion need not be met. However, as much as possible, testing should be conducted during the 6-hour period in which the highest throughput normally occurs.

(2) If the vapor processing system is intermittent in operation, the performance test shall begin at a reference vapor holder level and shall end at the same reference point. The test shall include at least two startups and shutdowns of the vapor processor. If this does not occur under automatically controlled operations, the system shall be manually controlled.

(3) The emission rate (E) of total organic compounds shall be computed using the following equation:

$$E = K\sum_{i=1}^{n}\left(V_{esi}C_{ei}\right) / \left(L10^{6}\right)$$

where:

E=emission rate of total organic compounds, mg/liter of gasoline loaded.

V_{esi}=volume of air-vapor mixture exhausted at each interval ''i'', scm.

C_{ei}=concentration of total organic compounds at each interval ''i'', ppm.

L=total volume of gasoline loaded, liters.

n=number of testing intervals.

i=emission testing interval of 5 minutes.

K=density of calibration gas, 1.83×10^{6} for propane and 2.41×10^{6} for butane, mg/scm.

(4) The performance test shall be conducted in intervals of 5 minutes. For each interval ''i'', readings from each measurement shall be recorded, and the volume exhausted (V_{esi}) and the corresponding average total organic compounds concentration (C_{ei}) shall be determined. The sampling system response time shall be considered in determining the average total organic compounds concentration corresponding to the volume exhausted.

(5) The following methods shall be used to determine the volume (V_{esi}) air-vapor mixture exhausted at each interval:

(i) Method 2B shall be used for combustion vapor processing systems.

(ii) Method 2A shall be used for all other vapor processing systems.

(6) Method 25A or 25B shall be used for determining the total organic compounds concentration (C_{ei}) at each interval. The calibration gas shall be either propane or butane. The owner or operator may exclude the methane and ethane content in the exhaust vent by any method (e.g., Method 18) approved by the Administrator.

(7) To determine the volume (L) of gasoline dispensed during the performance test period at all loading racks whose vapor emissions are controlled by the processing system being tested, terminal records or readings from gasoline dispensing meters at each loading rack shall be used.

(d) The owner or operator shall determine compliance with the standard in § 60.502(h) as follows:

(1) A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to 500 mm of water gauge pressure with ±2.5 mm of water precision, shall be calibrated and installed on the terminal's vapor collection system at a pressure tap located as close as possible to the connection with the gasoline tank truck.

(2) During the performance test, the pressure shall be recorded every 5 minutes while a gasoline truck is being loaded; the highest instantaneous pressure that occurs during each loading shall also be recorded. Every loading position must be tested at least once during the performance test.

(e) The performance test requirements of paragraph (c) of this section do not apply to flares defined in § 60.501 and meeting the requirements in § 60.18(b) through (f). The owner or operator shall demonstrate that the flare and associated vapor collection system is in compliance with the requirements

in §§ 60.18(b) through (f) and 60.503(a), (b), and (d).

(f) The owner or operator shall use alternative test methods and procedures in accordance with the alternative test method provisions in § 60.8(b) for flares that do not meet the requirements in § 60.18(b).

[54 FR 6678, Feb. 14, 1989; 54 FR 21344, Feb. 14, 1989, as amended at 68 FR 70965, Dec. 19, 2003]

§ 60.504 [Reserved]

§ 60.505 Reporting and recordkeeping.

(a) The tank truck vapor tightness documentation required under § 60.502(e)(1) shall be kept on file at the terminal in a permanent form available for inspection.

(b) The documentation file for each gasoline tank truck shall be updated at least once per year to reflect current test results as determined by Method 27. This documentation shall include, as a minimum, the following information:

(1) Test title: Gasoline Delivery Tank Pressure Test—EPA Reference Method 27.

(2) Tank owner and address.

(3) Tank identification number.

(4) Testing location.

(5) Date of test.

(6) Tester name and signature.

(7) Witnessing inspector, if any: Name, signature, and affiliation.

(8) Test results: Actual pressure change in 5 minutes, mm of water (average for 2 runs).

(c) A record of each monthly leak inspection required under § 60.502(j) shall be kept on file at the terminal for at least 2 years. Inspection records shall include, as a minimum, the following information:

(1) Date of inspection.

(2) Findings (may indicate no leaks discovered; or location, nature, and severity of each leak).

(3) Leak determination method.

(4) Corrective action (date each leak repaired; reasons for any repair interval in excess of 15 days).

(5) Inspector name and signature.

(d) The terminal owner or operator shall keep documentation of all notifications required under § 60.502(e)(4) on file at the terminal for at least 2 years.

(e) As an alternative to keeping records at the terminal of each gasoline cargo tank test result as required in paragraphs (a), (c), and (d) of this section, an owner or operator may comply with the requirements in either paragraph (e)(1) or (2) of this section.

(1) An electronic copy of each record is instantly available at the terminal.

(i) The copy of each record in paragraph (e)(1) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (e)(1) of this section.

(2) For facilities that utilize a terminal automation system to prevent gasoline cargo tanks that do not have valid cargo tank vapor tightness documentation from loading (*e.g.*, via a card lock-out system), a copy of the documentation is made available (*e.g.*, via facsimile) for inspection by permitting authority representatives during the course of a site visit, or within a mutually agreeable time frame.

(i) The copy of each record in paragraph (e)(2) of this section is an exact duplicate image of the original paper record with certifying signatures.

(ii) The permitting authority is notified in writing that each terminal using this alternative is in compliance with paragraph (e)(2) of this section.

(f) The owner or operator of an affected facility shall keep records of all replacements or additions of components performed on an existing vapor processing system for at least 3 years.

[48 FR 37590, Aug. 18, 1983; 48 FR 56580, Dec. 22, 1983, as amended at 68 FR 70965, Dec. 19, 2003]

§ 60.506 Reconstruction.

For purposes of this subpart:

(a) The cost of the following frequently replaced components of the affected facility shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital costs that would be required to construct a comparable entirely new facility'' under § 60.15: pump seals, loading arm gaskets and swivels, coupler gaskets, overfill sensor couplers and cables, flexible vapor hoses, and grounding cables and connectors.

(b) Under § 60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components (except components specified in § 60.506(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following December 17, 1980. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

Subpart AAA—Standards of Performance for New Residential Wood Heaters

SOURCE: 53 FR 5873, Feb. 26, 1988, unless otherwise noted.

§ 60.530 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each wood heater manufactured on or after July 1, 1988, or sold at retail on or after July 1, 1990. The provisions of this subpart do not apply to wood heaters constructed prior to July 1, 1988, that are or have been owned by a noncommercial owner for his personal use.

(b) Each affected facility shall comply with the applicable emission limits in § 60.532 unless exempted under paragraph (c), (d), (e), (f), (g) or (h) of this section.

(c)–(d) [Reserved]

(e) Affected facilities manufactured in the U.S. for export are exempt from the applicable emission limits of § 60.532 and the requirements of § 60.533.

(f) A wood heater used for research and development purposes that is never offered for sale or sold is exempt from the applicable emission limits of § 60.532 and the requirements of § 60.533. No more than 50 wood heaters manufactured per model line may be exempted for this purpose.

(g) A coal-only heater is exempt from the applicable emission limits of § 60.532 and the requirements of § 60.533.

(h) The following are not affected facilities and are not subject to this subpart:

(1) Open masonry fireplaces constructed on site,

(2) Boilers,

(3) Furnaces, and

(4) Cookstoves.

(i) Modification or reconstruction, as defined in §§ 60.14 and 60.15 of subpart A, shall not, by itself, make a wood heater an affected facility under this subpart.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995]

§ 60.531 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and subpart A of this part.

At retail means the sale by a commercial owner of a wood heater to the ultimate purchaser.

Boiler means a solid fuel burning appliance used primarily for heating spaces, other than the space where the appliance is located, by the distribution through pipes of a gas or fluid heated in the appliance. The appliance must be tested and listed as a boiler under accepted American or Canadian safety testing codes. A manufacturer may request an exemption in writing from the Administrator by stating why the testing and listing requirement is not practicable and by demonstrating that his appliance is otherwise a boiler.

Coal-only heater means an enclosed, coal-burning appliance capable of space heating, or domestic water heating, which has all of the following characteristics:

(1) An opening for emptying ash that is located near the bottom or the side of the appliance,

(2) A system that admits air primarily up and through the fuel bed,

(3) A grate or other similar device for shaking or disturbing the fuel bed or power-driven mechanical stoker,

(4) Installation instructions that state that the use of wood in the stove, except for coal ignition purposes, is prohibited by law, and

(5) The model is listed by a nationally recognized safety-testing laboratory for use of coal only, except for coal ignition purposes.

Commercial owner means any person who owns or controls a wood heater in the course of the manufacture, importation, distribution, or sale of the wood heater.

Cookstove means a wood-fired appliance that is designed primarily for cooking food and that has the following characteristics:

(1) An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack,

(2) A device for measuring oven temperatures,

(3) A flame path that is routed around the oven,

(4) A shaker grate,

(5) An ash pan,

(6) An ash clean-out door below the oven, and

(7) The absence of a fan or heat channels to dissipate heat from the appliance.

Furnace means a solid fuel burning appliance that is designed to be located outside of ordinary living areas and that warms spaces other than the space where the appliance is located, by the distribution of air heated in the appliance through ducts. The appliance must be tested and listed as a furnace under accepted American or Canadian safety testing codes unless exempted from this provision by the Administrator. A manufacturer may request an exemption in writing from the Administrator by stating why the testing and listing requirement is not practicable and by demonstrating that his appliance is otherwise a furnace.

Manufactured means completed and ready for shipment (whether or not packaged).

Manufacturer means any person who constructs or imports a wood heater.

Model line means all wood heaters offered for sale by a single manufacturer that are similar in all material respects.

Representative affected facility means an individual wood heater that is similar in all material respects to other wood heaters within the model line it represents.

Sale means the transfer of ownership or control, except that transfer of control shall not constitute a sale for purposes of § 60.530(f).

Similar in all material respects means that the construction materials, exhaust and inlet air system, and other design features are within the allowed tolerances for components identified in § 60.533(k).

Wood heater means an enclosed, wood burning appliance capable of and intended for space heating or domestic water heating that meets all of the following criteria:

(1) An air-to-fuel ratio in the combustion chamber averaging less than 35-to-1 as determined by the test procedure prescribed in § 60.534 performed at an accredited laboratory;

(2) A usable firebox volume of less than 0.57 cubic meters (20 cubic feet);

(3) A minimum burn rate of less than 5 kg/hr (11 lb/hr) as determined by the test procedure prescribed in § 60.534 performed at an accredited laboratory; and

(4) A maximum weight of 800 kg (1,760 lb). In determining the weight of an appliance for these purposes, fixtures and devices that are normally sold separately, such as flue pipe, chimney, and masonry components that are not an integral part of the appliance or heat distribution ducting, shall not be included.

[53 FR 5873, Feb. 26, 1988, as amended at 64 FR 7466, Feb. 12, 1999; 65 FR 61763, Oct. 17, 2000]

§ 60.532 Standards for particulate matter.

Unless exempted under § 60.530, each affected facility:

(a) [Reserved]

(b) Manufactured on or after July 1, 1990, or sold at retail on or after July 1, 1992, shall comply with the following particulate matter emission limits as determined by the test methods and procedures in § 60.534:

(1) An affected facility equipped with a catalytic combustor shall not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 4.1 g/hr (0.009 lb/hr). Particulate emissions during any test run at any burn rate that is required to be used in the weighted average shall not exceed the value calculated for ''C'' (rounded to 2 significant figures) calculated using the following equation:

(i) At burn rates less than or equal to 2.82 kg/hr (6.2 lb/hr),

$$C = K_1 BR + K_2$$

Where:

BR = Burn rate in kg/hr (lb/hr)
K_1 = 3.55 g/kg (0.00355 lb/lb)
K_2 = 4.98 g/hr (0.0.011 lb/hr)

(ii) At burn rates greater than 2.82 kg/hr (6.2 lb/hr), C = 15 g/hr (0.033 lb/hr).

(2) An affected facility not equipped with a catalytic combustor shall not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 7.5 g/hr (0.017 lb/hr). Particulate emissions shall not exceed 15 g/hr (0.033 lb/hr) during any test run at a burn rate less than or equal to 1.5 kg/hr (3.3 lb/hr) that is required to be used in the weighted average and particulate emissions shall not exceed 18 g/hr (0.040 lb/hr) during any test run at a burn rate greater than 1.5 kg/hr (3.3 lb/hr) that is required to be used in the weighted average.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995; 65 FR 61764, Oct. 17, 2000]

§ 60.533 Compliance and certification.

(a) For each model line, compliance with applicable emission limits may be determined based on testing of representative affected facilities within the model line.

(b) Any manufacturer of an affected facility may apply to the Administrator for a certificate of compliance for a model line. The application shall be in writing to: Stationary Source Compliance Division (EN–341), U.S. EPA, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Attention: Wood Heater Program. The manufacturer must submit two complete copies of the application and attachments. The application must be signed by the manufacturer, or an authorized representative, and shall contain the following:

(1) The model name and/or design number,

(2) Two color photographs of the tested unit (or, for models being certified under § 60.530(c), photographs of a representative unit), one showing a front view and the other, a side view,

(3)(i) Engineering drawings and specifications of components that may affect emissions (including specifications for each component listed in paragraph (k) of this section). Manufacturers may use complete assembly or design drawings that have been prepared for other purposes, but should designate on the drawings the dimensions of each component listed in paragraph (k) of this section. Manufacturers shall identify tolerances of components of the tested unit listed in paragraph (k)(2) of this section that are different from those specified in that paragraph, and show that such tolerances may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits.

(ii) A statement whether the firebox or any firebox component (other than one listed in paragraph (k)(3) of this section) will be composed of different material from the material used for the firebox or firebox component in the wood heater on which certification testing was performed and a description of any such differences.

(iii) For applications to certify a model line of catalytic wood heaters to meet the emission limits in § 60.532(b), a statement describing the manufacturer's program to ensure consistency in the size of any gap in the catalyst bypass mechanism. The statement shall describe, in narrative form, the components of the system that affect the size of the gap, any specifications for critical dimensions of any such components, and the procedure the manufacturer will use to ensure consistency in the size of the catalyst bypass gap.

(4) All documentation pertaining to a valid certification test, including the complete test report and, for all test runs: Raw data sheets, laboratory technician notes, calculations, and test results. Documentation shall include the items specified in the applicable test methods. Recommended formats and guidance materials are available from the Administrator.

(5) For catalytic wood heaters, a copy of the catalytic combustor warranty,

(6) A statement that the manufacturer will conduct a quality assurance

program for the model line which satisfies the requirements of paragraph (o) of this section,

(7) A statement describing how the tested unit was sealed by the laboratory after the completion of certification testing, and

(8) A statement that the manufacturer will notify the accredited laboratory if the application for certification is granted, within thirty days of receipt of notification from EPA.

(9) Statements that the wood heaters manufactured under this certificate will be—

(i) Similar in all material respects to the wood heater submitted for certification testing, and

(ii) Will be labeled as prescribed in § 60.536,

(10) For catalytic wood heaters, a statement that the warranty, access and inspection, and temperature monitoring provisions in paragraphs (c), (d), and (m) of this section will be met,

(11) A statement that the manufacturer will comply with the recordkeeping and reporting requirements in § 60.537,

(12) A written estimate of the number of wood heaters that the manufacturer anticipates that he will produce annually for the first two production years. Compliance with this provision may be obtained by designating one of the following ranges:

(i) Less than 2,500,

(ii) 2,500 to 4,999,

(iii) 5,000 to 9,999,

(iv) 10,000 to 49,999, and

(v) 50,000 or greater; and

(13) At the beginning of each test run in a certification test series, two photographs of the fuel load: One before and one after it is placed in the wood heater. One of the photographs shall show the front view of the wood load and the other shall show the side view.

(14) For manufacturers seeking certification of model lines under § 60.533(e) to meet the emission limits in § 60.532(b), a statement that the manufacturer has entered into a contract with an accredited laboratory which satisfies the requirements of paragraph (g) of this section.

(c) If the affected facility is a catalytic wood heater, the warranty for the catalytic combustor shall include the replacement of the combustor and any prior replacement combustor without charge to the consumer for:

(1) 2 years from the date the consumer purchased the heater for any defects in workmanship or materials that prevent the combustor from functioning when installed and operated properly in the wood heater, and

(2) 3 years from the date the consumer purchased the heater for thermal crumbling or disintegration of the substrate material for heaters manufactured after July 1, 1990.

(d) The manufacturer of an affected facility equipped with a catalytic combustor shall provide for a means to allow the owner to gain access readily to the catalyst for inspection or replacement purposes and shall document in his application for certification how the catalyst is replaced.

(e)(1) The Administrator shall issue a certificate of compliance for a model line if he determines, based on all information submitted by the applicant and any other relevant information available to him, that:

(i) A valid certification test has demonstrated that the wood heater representative of the model line complies with the applicable particulate emission limits in § 60.532,

(ii) Any tolerances or materials for components listed in paragraph (k) (2) or (3) of this section that are different from those specified in those paragraphs may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits, and

(iii) The requirements of paragraphs (b), (c), (d), and (m) of this section have been met. The program described under paragraph (b)(3)(iii) of this section shall be deemed a tolerance specified in the certified design.

(2) [Reserved]

(3) Upon denying certification under this paragraph, the Administrator shall give written notice to the manufacturer setting forth the basis for his determination.

(f) To be valid, a certification test must be:

(1) Announced to the Administrator in accordance with § 60.534(e),

(2) Conducted by a testing laboratory accredited by the Administrator pursuant to § 60.535,

(3) Conducted on a wood heater similar in all material respects to other wood heaters of the model line that is to be certified, and

(4) Conducted in accordance with the test methods and procedures specified in § 60.534.

(g) To have a wood heater model certified under § 60.533(e) to meet the emission limits in § 60.532(b), a manufacturer must enter into a contract with the accredited laboratory that performed the certification test, under which the laboratory will:

(1) Conduct the random compliance audit test at no cost to the manufacturer if EPA selects that laboratory to conduct the test, or

(2) Pay the manufacturer the reasonable cost of a random compliance audit test (as determined by EPA) if EPA selects any other laboratory to conduct the test.

(h) [Reserved]

(i) An applicant for certification may apply for a waiver of the requirement to submit the results of a certification test pursuant to paragraph (b)(4) of this section, if the wood heaters of the model line are similar in all material respects to another model line that has already been issued a certificate of compliance. A manufacturer that seeks a waiver of certification testing must identify the model line that has been certified, and must submit a copy of an agreement with the owner of the design permitting the applicant to produce wood heaters of that design.

(j)(1) Unless revoked sooner by the Administrator, a certificate of compliance shall be valid:

(i) [Reserved]

(ii) For five years from the date of issuance, for a model line certified as meeting emission limits in § 60.532(b).

(2) Upon application for renewal of certification by the manufacturer, the Administrator may waive the requirement for certification testing upon determining that the model line continues to meet the requirements for certification in paragraph (e) of this section, or that a waiver of certification is otherwise appropriate.

(3) Upon waiving certification testing under paragraph (j)(2) of this section, the Administrator shall give written notice to the manufacturer setting forth the basis for his determination.

(k)(1) A model line must be recertified whenever any change is made in the design submitted pursuant to § 60.533(b)(3) that is presumed to affect the particulate emission rate for that model line. The Administrator may waive this requirement upon written request by the manufacturer, if he determines that the change may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits. The granting of such a waiver does not relieve the manufacturer of any compliance obligations under this subpart.

(2) Any change in the indicated tolerances of any of the following components (where such components are applicable) is presumed to affect particulate emissions if that change exceeds ±0.64 cm (±¼ inch) for any linear dimension and ±5 percent for any cross-sectional area relating to air introduction systems and catalyst bypass gaps unless other dimensions and cross-sectional areas are previously approved by the Administrator under paragraph (e)(1)(ii) of this section:

(i) Firebox: Dimensions,

(ii) Air introduction systems: Cross-sectional area of restrictive air inlets, outlets, and location, and method of control,

(iii) Baffles: Dimensions and locations,

(iv) Refractory/insulation: Dimensions and location,

(v) Catalyst: Dimensions and location,

(vi) Catalyst bypass mechanism and, for model lines certified to meet the emissions limits in § 60.532(b), catalyst bypass gap tolerances (when bypass mechanism is in closed position): Dimensions, cross-sectional area, and location,

(vii) Flue gas exit: Dimensions and location,

(viii) Door and catalyst bypass gaskets: Dimensions and fit,

(ix) Outer shielding and coverings: Dimensions and location,

(x) Fuel feed system: For wood heaters that are designed primarily to burn

wood pellets and other wood heaters equipped with a fuel feed system, the fuel feed rate, auger motor design and power rating, and the angle of the auger to the firebox, and

(xi) Forced air combustion system: For wood heaters so equipped, the location and horsepower of blower motors and the fan blade size.

(3) Any change in the materials used for the following components is presumed to affect emissions:

(i) Refractory/insulation or

(ii) Door and catalyst bypass gaskets.

(4) A change in the make, model, or composition of a catalyst is presumed to affect emissions, unless the change has been approved in advance by the Administrator, based on test data that demonstrate that the replacement catalyst is equivalent to or better than the original catalyst in terms of particulate emission reduction.

(l)(1) The Administrator may revoke certification if he determines that the wood heaters being produced in that model line do not comply with the requirements of this section or § 60.532. Such a determination shall be based on all available evidence, including:

(i) Test data from a retesting of the original unit on which the certification test was conducted,

(ii) A finding that the certification test was not valid. The finding must be based on problems or irregularities with the certification test or its documentation, but may be supplemented by other information.

(iii) A finding that the labeling of the wood heater does not comply with the requirements of § 60.536,

(iv) Failure by the manufacturer to comply with reporting and recordkeeping requirements under § 60.537,

(v) Physical examination showing that a significant percentage of production units inspected are not similar in all material respects to the representative affected facility submitted for testing, or

(vi) Failure of the manufacturer to conduct a quality assurance program in conformity with paragraph (o) of this section.

(2) Revocation of certification under this paragraph shall not take effect until the manufacturer concerned has been given written notice by the Administrator setting forth the basis for the proposed determination and an opportunity to request a hearing under § 60.539.

(3) Determination to revoke certification based upon audit testing shall be made only in accordance with paragraph (p) of this section.

(m) A catalytic wood heater shall be equipped with a permanent provision to accommodate a commercially available temperature sensor which can monitor combustor gas stream temperatures within or immediately downstream [within 2.54 centimeters (1 inch)] of the combustor surface.

(n) Any manufacturer of an affected facility subject under § 60.530(b) to the applicable emission limits of this subpart that does not belong to a model line certified under this section shall cause that facility to be tested in an accredited laboratory in accordance with paragraphs (f) (1), (2), and (4) of this section before it leaves the manufacturer's possession and shall report the results to the Administrator.

(o)(1) For each certified model line, the manufacturer shall conduct a quality assurance program which satisfies the following requirements:

(2) Except as provided in paragraph (o)(5) of this section, the manufacturer or his authorized representative shall inspect at least one from every 150 units produced within a model line to determine that the wood heater is within applicable tolerances for all components that affect emissions as listed in paragraph (k)(2) of this section.

(3)(i) Except as provided in paragraph (o)(3)(iii) or (o)(5) of this section, the manufacturer or his authorized representative shall conduct an emission test on a randomly selected affected facility produced within a model line certified under § 60.533 (e) or (h), on the following schedule:

If weighted average certification test results were—	If yearly production per model is—	
	<2500	>2500
70% or less of std	When directed by EPA, not to exceed once every 10,000 stoves.	Every 10,000 stoves or triennially (whichever is more frequent).

If weighted average certification test results were—	If yearly production per model is—	
	<2500	>2500
Within 30% of std	Every 5,000 stoves	Every 5,000 stoves or annually (whichever is more frequent).

(ii) Emission tests shall be conducted in conformity with § 60.534(a), using either approved method for measuring particulate matter (as provided in § 60.534). The manufacturer shall notify EPA by U.S. mail that an emissions test required pursuant to this paragraph will be conducted within one week of the mailing of the notification.

(iii) If the manufacturer stated pursuant to paragraph (b)(3) of this section that the firebox or any firebox component would be composed of a different material than the material used in the wood heater on which certification testing was performed, the first test shall be performed before 1,000 wood heaters are produced. The manufacturer shall submit a report of the results of this emission test to the Administrator within 45 days of the completion of testing.

(4) The manufacturer shall take remedial measures, as appropriate, when inspection or testing pursuant to paragraph (o) of this section indicates that affected facilities within the model line are not within applicable tolerances or do not comply with the applicable emission limit. Manufacturers shall record the problem identified, the extent of the problem, the remedial measures taken, and the effect of such remedial measures as projected by the manufacturer or determined by any additional testing.

(5)(i) If two consecutive passing tests are conducted under either paragraph (o) (2) or (3) of this section, the required frequency of testing under the applicable paragraph shall be modified as follows: Skip every other required test.

(ii) If five consecutive passing tests are conducted under the modified schedule provided for in Paragraph (o)(5)(i) of this section, the required frequency of testing under the applicable paragraph shall be further modified as follows: Skip three consecutive required tests after each required test that is conducted.

(iii) Testing shall resume on the frequency specified in the paragraph (o) (2) or (3), as applicable, if a test failure results during any test conducted under a modified schedule.

(6) If emissions tests under paragraph (o) of this section are conducted at an altitude different from the altitude at which certification tests were conducted, and are not conducted under pressurized conditions, the results shall be adjusted for altitude in accordance with paragraph (h)(3)(iii) of this section.

(p)(1)(i) The Administrator shall after July 1, 1990, select for random compliance audit testing certified wood heater model lines that have not already been subject to a random compliance audit under this paragraph. The Administrator shall not select more than one model line under this program for every five model lines for which certification is granted under § 60.533(e) to meet the emission limits in § 60.532(b). No accredited laboratory shall test or bear the expense of testing, as provided in the contract described in paragraph (g) of this section, more than one model line from every five model lines tested by the laboratory for which certification was granted. The Administrator shall use a procedure that ensures that the selection process is random.

(ii) The Administrator may, by means of a neutral selection scheme, select model lines certified under § 60.533(e) or § 60.533(h) for selective enforcement audit testing under this paragraph. Prior to July 1, 1990, the Administrator shall only select a model line for a selective enforcement audit on the basis of information indicating that affected facilities within the model line may exceed the applicable emission limit in § 60.532.

(2) The Administrator shall randomly select for audit testing five production wood heaters from each model line selected under paragraph (p)(1) of this section. These wood heaters shall be selected from completed units ready for shipment from the manufacturer's facility (whether or not the units are in a package or container). The wood heaters shall be sealed upon selection and remain sealed until they are tested or until the audit is completed. The

wood heaters shall be numbered in the order that they were selected.

(3)(i) The Administrator shall test, or direct the manufacturer to test, the first of the five wood heaters selected under paragraph (p)(2) of this section in a laboratory accredited under § 60.535 that is selected pursuant to paragraph (p)(4) of this section.

(ii) The expense of the random compliance audit test shall be the responsibility of the wood heater manufacturer. A manufacturer may require the laboratory that performed the certification test to bear the expense of a random compliance audit test by means of the contract required under paragraph (g) of this section. If the laboratory with which the manufacturer had a contract has ceased business due to bankruptcy or is otherwise legally unable to honor the contract, the Administrator will not select any of that manufacturer's model lines for which certification testing has been conducted by that laboratory for a random compliance audit test.

(iii) The test shall be conducted using the same test method and procedure used to obtain certification. If the certification test consisted of more than one particulate sampling test method, the Adminstrator may use either one of these methods for the purpose of audit testing. If the test is performed in a pressure vessel, air pressure in the pressure vessel shall be maintained within 1 percent of the average of the barometric pressures recorded for each individual test run used to calculate the weighted average emission rate for the certification test. The Administrator shall notify the manufacturer at least one week prior to any test under this paragraph, and allow the manufacturer and/or his authorized representatives to observe the test.

(4)(i) Except as provided in this paragraph, the Administrator may select any accredited laboratory for audit testing.

(ii)(A) The Administrator shall select the accredited laboratory that performed the test used to obtain certification for audit testing, until the Administrator has amended this subpart, based upon a determination pursuant to paragraph (p)(4)(ii)(B) of this section, to allow testing at another laboratory. If another laboratory is selected pursuant to this paragraph, and the overall precision of the test method and procedure is greater than ±1 gram per hour (±0.0022 lb per hour) of the weighted average at laboratories below 304 meters (1,000 feet) elevation (or equivalent), the interlaboratory component of the precision shall be added to the applicable emissions standard for the purposes of this paragraph.

(B) [Reserved]

(iii) The Administrator shall not select an accredited laboratory that is located at an elevation more than 152 meters (500 feet) higher than the elevation of the laboratory which performed the test used to obtain certification, unless the audit test is performed in a pressure vessel.

(5)(i) If emissions from a wood heater tested under paragraph (p)(3) of this section exceed the applicable weighted average emission limit by more than 50 percent, the Administrator shall so notify the manufacturer that certification for that model line is suspended effective 72 hours from the receipt of the notice, unless the suspension notice is withdrawn by the Administrator. The suspension shall remain in effect until withdrawn by the Administrator, or 30 days from its effective date (if a revocation notice under paragraph (p)(5)(ii) of this section is not issued within that period), or the date of final agency action on revocation, whichever occurs earlier.

(ii)(A) If emissions from a wood heater tested under paragraph (p)(3) of this section exceed the applicable weighted average emission limit, the Administrator shall notify the manufacturer that certification is revoked for that model line.

(B) A revocation notice under paragraph (p)(5)(ii)(A) shall become final and effective 60 days after receipt by the manufacturer, unless it is withdrawn, a hearing is requested under § 60.539, or the deadline for requesting a hearing is extended.

(C) The Administrator may extend the deadline for requesting a hearing for up to 60 days for good cause.

(D) A manufacturer may extend the deadline for requesting a hearing for up to six months, by agreeing to a voluntary suspension of certification.

(iii) Any notification under paragraph (p)(5)(i) or (p)(5)(ii) of this section shall include a copy of a preliminary test report from the accredited laboratory. The accredited laboratory shall provide a preliminary test report to the Administrator within 10 days of the completion of testing, if a wood heater exceeds the applicable emission limit in § 60.532. The laboratory shall provide the Administrator and the manufacturer, within 30 days of the completion of testing, all documentation pertaining to the test, including the complete test report and raw data sheets, laboratory technician notes, and test results for all test runs.

(iv) Upon receiving notification of a test failure under paragraph (p)(5)(ii) of this section, the manufacturer may submit some or all of the remaining four wood heaters selected under paragraph (p)(2) of this section for testing at his own expense, in the order they were selected by the Administrator, at the laboratory that performed the emissions test for the Administrator.

(v) Whether or not the manufacturer proceeds under paragraph (p)(5)(iv) of this section, the manufacturer may submit any relevant information to the Administrator, including any other test data generated pursuant to this subpart. The manufacturer shall pay the expense of any testing performed for him.

(vi) The Administrator shall withdraw any notice issued under paragraph (p)(5)(ii) of this section if tests under paragraph (p)(5)(iv) of this section show either—

(A) That all four wood heaters tested for the manufacturer met the applicable weighted average emission limits, or

(B) That the second and third wood heaters selected met the applicable weighted average emission limits and the average of all three weighted averages (including the original audit test) was below the applicable weighted average emission limits.

(vii) The Administrator may withdraw any proposed revocation, if the Administrator finds that an audit test failure has been rebutted by information submitted by the manufacturer under paragraph (p)(5)(iv) of this section and/or (p)(5)(v) of this section or by any other relevant information available to him.

(viii) Any withdrawal of a proposed revocation shall be accompanied by a document setting forth its basis.

[53 FR 5874, Feb. 26, 1988; 53 FR 14889, Apr. 26, 1988, as amended at 60 FR 33925, June 29, 1995; 63 FR 64874, Nov. 24, 1998; 65 FR 61764, Oct. 17, 2000]

§ 60.534 Test methods and procedures.

Test methods and procedures in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with the standards and requirements for certification under §§ 60.532 and 60.533 as follows:

(a) Method 28 shall be used to establish the certification test conditions and the particulate matter weighted emission values.

(b) Emission concentrations may be measured with either:

(1) Method 5G, if a dilution tunnel sampling location is used, or

(2) Method 5H, if a stack location is used.

(c) Method 28A shall be used to determine that a wood combustion unit qualifies under the definition of wood heater in § 60.531(a). If such a determination is necessary, this test shall be conducted by an accredited laboratory.

(d) Appendix J is used as an optional procedure in establishing the overall thermal efficiency of wood heaters. (To be proposed separately.)

(e)(1) The manufacturer of an affected facility shall notify the Administrator of the date that certification testing is scheduled to begin. (A notice from the testing lab containing the information required in § 60.533(f)(1) may be used to satisfy this requirement.) This notice shall be at least 30 days before the start of testing. The notification of testing shall be in writing, and include the manufacturer's name and address, the testing laboratory's name, the model name and number (or, if unavailable, some other way to distinguish between models), and the dates of testing.

(2) Any emission testing conducted on the wood heater for which notice was delivered shall be presumed to be certification testing if such testing occurs on or after the scheduled date of

testing and before a test report is submitted to the Administrator. If certification testing is interrupted for more than 24 hours, the laboratory shall notify the Administrator by telephone, as soon as practicable, and also by letter, stating why the testing was interrupted and when it is expected to be resumed.

(3) A manufacturer or laboratory may change the date that testing is scheduled to begin by notifying the Administrator at least 14 days before the start of testing. Notification of schedule change shall be made at least two working days prior to the originally scheduled test date. This notice of rescheduling shall be made by telephone or other expeditious means and shall be documented in writing and sent concurrently.

(4) A model line may be withdrawn from testing before the certification test is complete, provided the wood heater is sealed in accordance with § 60.535(g). The manufacturer shall notify the Administrator 30 days before the resumption of testing.

(5) The manufacturer or laboratory shall notify the Administrator if a test is not completed within the time allotted as set forth in the notice of testing. The notification shall be made by the end of the allotted testing period by telephone or other expeditious means, and documented in writing sent concurrently, and shall contain the dates when the test will be resumed. Unless otherwise approved by the Administrator, failure to conduct a certification test as scheduled without notifying the Administrator of any schedule change 14 days prior to the schedule or revised test dates will result in voiding the notification. In the case of a voided notification, the manufacturer shall provide the Administrator with a second notification at least 30 days prior to the new test dates. The Administrator may waive the requirement for advance notice for test resumptions.

(f) The testing laboratory shall allow the manufacturer to observe certification testing. However, manufacturers shall not involve themselves in the conduct of the test after the pretest burn (as defined by EPA Method 28) has begun. Communications between the manufacturer and laboratory personnel regarding operation of the wood heater shall be limited to written communications transmitted prior to the first pretest burn of the certification series. Written communications between the manufacturer and laboratory personnel may be exchanged during the certification test only if deviations from the test procedures are observed that constitute improper conduct of the test. All communications shall be included in the test documentation required to be submitted under § 60.533(b)(4) and shall be consistent with instructions provided in the owner's manual required under § 60.536(k), except to the extent that they address details of the certification tests that would not be relevant to owners.

§ 60.535 Laboratory accreditation.

(a)(1) A laboratory may apply for accreditation by the Administrator to conduct wood heater certification tests pursuant to § 60.533. The application shall be in writing to: Emission Measurement Branch (MD–13), U.S. EPA, Research Triangle Park, NC 27711, Attn: Wood Heater Laboratory Accreditation.

(2) [Reserved]

(3) If accreditation is denied under this section, the Administrator shall give written notice to the laboratory setting forth the basis for his determination.

(b) In order for a test laboratory to qualify for accreditation the laboratory must:

(1) Submit its written application providing the information related to laboratory equipment and management and technical experience of laboratory personnel. Applications from laboratories shall establish that:

(i) Laboratory personnel have a total of one year of relevant experience in particulate measurement, including at least three months experience in measuring particulate emissions from wood heaters,

(ii) The laboratory has the equipment necessary to perform testing in accordance with either § 60.534(b) (1) or (2), and

(iii) Laboratory personnel have experience in test management or laboratory management.

(2) Have no conflict of interest and receive no financial benefit from the outcome of certification testing conducted pursuant to § 60.533,

(3) Agree to enter into a contract as described in § 60.533(g) with each wood heater manufacturer for whom a certification test has been performed.

(4) [Reserved]

(5) Demonstrate proficiency to achieve reproducible results with at least one test method and procedure in § 60.534(b), by:

(i) Performing a test consisting of at least eight test runs (two in each of the four burn rate categories) on a wood heater identified by the Administrator,

(ii) Providing the Administrator at least 30 days prior notice of the test to afford the Administrator the opportunity to have an observer present, and

(iii) Submitting to the Administrator all documentation pertaining to the test, including a complete test report and raw data sheets, laboratory technical notes, and test results for all test runs,

(6) Be located in the continental United States,

(7) Agree to participate annually in a proficiency testing program conducted by the Administrator,

(8) Agree to allow the Administrator access to observe certification testing,

(9) Agree to comply with reporting and recordkeeping requirements that affect testing laboratories, and

(10) Agree to accept the reasonable cost of an RCA test (as determined by the Administrator) if it is selected to conduct the RCA test of a model line originally tested for certification at another laboratory.

(c)–(d) [Reserved]

(e)(1) The Administrator may revoke EPA laboratory accreditation if he determines that the laboratory:

(i) No longer satisfies the requirements for accreditation in paragraph (b) or (c),

(ii) Does not follow required procedures or practices,

(iii) Had falsified data or otherwise misrepresented emission data,

(iv) [Reserved]

(v) Failed to participate in a proficiency testing program, in accordance with its commitment under paragraph (b)(5) of this section, or

(vi) Failed to seal the wood heater in accordance with paragraph (g) of this section.

(2) Revocation of accreditation under this paragraph shall not take effect until the laboratory concerned has been given written notice by the Administrator setting forth the basis for the proposed determination and an opportunity for a hearing under § 60.539. However, if revocation is ultimately upheld, all tests conducted by the laboratory after written notice was given may, at the discretion of the Administrator, be declared invalid.

(f) Unless revoked sooner, a certificate of accreditation granted by the Administrator shall be valid:

(1) For five years from the date of issuance, for certificates issued under paragraph (b) of this section, or

(2) Until July 1, 1990, for certificates issued under paragraph (c) of this section.

(g) A laboratory accredited by the Administrator shall seal any wood heater on which it performed certification tests, immediately upon completion or suspension of certification testing, by using a laboratory-specific seal.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995; 65 FR 61764, Oct. 17, 2000]

§ 60.536 Permanent label, temporary label, and owner's manual.

(a)(1) Each affected facility manufactured on or after July 1, 1988, or offered for sale at retail on or after July 1, 1990, shall have a permanent label affixed to it that meets the requirements of this section.

(2) Except for wood heaters subject to § 60.530 (e), (f), or (g), the permanent label shall contain the following information:

(i) Month and year of manufacture,

(ii) Model name or number, and

(iii) Serial number.

(3) The permanent label shall:

(i) Be affixed in a readily visible or accessible location,

(ii) Be at least 8.9 cm long and 5.1 cm wide (3½ inches long and 2 inches wide).

(iii) Be made of a material expected to last the lifetime of the wood heater,

(iv) Present required information in a manner so that it is likely to remain legible for the lifetime of the wood heater, and

(v) Be affixed in such a manner that it cannot be removed from the appliance without damage to the label.

(4) The permanent label may be combined with any other label, as long as the required information is displayed, and the integrity of the permanent label is not compromised.

(b) If the wood heater belongs to a model line certified under § 60.533, and has not been found to exceed the applicable emission limits or tolerances through quality assurance testing, one of the following statements, as appropriate, shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified to comply with July, 1988, particulate emission standards.
Not approved for sale after June 30, 1992.

or

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified to comply with July, 1990, particulate emission standards.

(c)(1) If compliance is demonstrated under § 60.530(c), the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified under 40 CFR 60.530(c). Not approved for sale after June 30, 1992.

(2) If compliance is demonstrated under § 60.533(h), one of the following statements, as appropriate, shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified under 40 CFR 60.533(h) to comply with July, 1988 particulate emissions standards. Not approved for sale after June 30, 1992.

or

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified under 40 CFR 60.533(h), to comply with July, 1990 particulate emissions standards.

(d) Any label statement under paragraph (b) or (c) of this section constitutes a representation by the manufacturer as to any wood heater that bears it:

(1) That certification was in effect at the time the wood heater left the possession of the manufacturer,

(2) That the manufacturer was, at the time the label was affixed, conducting a quality assurance program in conformity with § 60.533(o),

(3) That as to any wood heater individually tested for emissions by the manufacturer under § 60.533(o)(3), that it met the applicable emissions limits, and

(4) That as to any wood heater individually inspected for tolerances under § 60.533(o)(2), that the wood heater is within applicable tolerances.

(e) If an affected facility is exempt from the emission limits in § 60.532 under the provisions of § 60.530(d), the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Approved for sale until June 30, 1991.

(f)(1) If an affected facility is manufactured in the U.S. for export, the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Export stove. May not be operated within the United States.

(2) If an affected facility is manufactured for use for research and development purposes as provided in § 60.530(f), the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Research Stove. Not approved for sale.

(3) If an appliance is a coal-only heater as defined in § 60.530, the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

This heater is only for burning coal. Use of any other solid fuel except for coal ignition purposes is a violation of Federal law.

(g) Any affected facility that does not qualify for labeling under any of paragraphs (b) through (f) of this section shall bear one of the following labels:

(1) If the test conducted under § 60.533(n) indicates that the facility does not meet applicable emissions limits:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Does not meet EPA particulate emission standards. IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER.

(2) If the test conducted under § 60.533(n) indicates that the facility does meet applicable emissions limits:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Meets EPA particulate emission standards.

(3) If the facility has not been tested as required by § 60.533(e):

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Not tested. Not approved for sale. IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER.

(h) For affected facilities equipped with catalytic combustors, the following statement shall appear on the permanent label:

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. Consult owner's manual for further information. It is against the law to operate this wood heater in a manner inconsistent with operating instructions in the owner's manual, or if the catalytic element is deactivated or removed.

(i) An affected facility permanently labeled under paragraph (b) or (c) of this section shall have attached to it a temporary label that shall contain only the following:

(1) A statement indicating the compliance status of the model. The statement shall be one of the statements provided in appendix I, section 2.2.1. Instructions on the statement to select are provided in appendix I.

(2) A graphic presentation of the composite particulate matter emission rate as determined in the certification test, or as determined by the Administrator if the wood heater is certified under § 60.530(c). The method for presenting this information is provided in appendix I, section 2.2.2.

(3) A graphic presentation of the overall thermal efficiency of the model. The method for presenting this information is provided in appendix I, section 2.2.3. At the discretion of the manufacturer, either the actual measured efficiency of the model or its estimated efficiency may be used for purposes of this paragraph. The actual efficiency is the efficiency measured in tests conducted pursuant to § 60.534(d). The estimated efficiency shall be 72 percent if the model is catalyst-equipped and 63 percent if the model is not catalyst equipped, and 78 percent if the model is designed to burn wood pellets for fuel. Wood heaters certified under § 60.530(c) shall use these estimated efficiencies.

(4) A numerical expression of the heat output range of the unit, in British thermal units per hour (Btu/hr) rounded to the nearest 100 Btu/hr.

(i) If the manufacturer elects to report the overall efficiency of the model based on test results pursuant to paragraph (i)(3) of this section, he shall report the heat output range measured during the efficiency test. If an accessory device is used in the certification test to achieve any low burn rate criterion specified in this subpart, and if this accessory device is not sold as a part of the wood heater, the heat output range shall be determined using the formula in paragraph (i)(4)(ii) of this section based upon the lowest sustainable burn rate achieved without the accessory device.

(ii) If the manufacturer elects to use the estimated efficiency as provided in paragraph (i)(3) of this section, he shall estimate the heat output of the model as follows:

$$HO_E = H_v \times (\text{Estimated overall efficiency}/100) \times BR$$

Where:

HO_E = Estimated heat output in Btu/hr

H_v = Heating value of fuel, 19,140 Btu/kg (8,700 Btu/lb)
BR = Burn rate of dry test fuel per hour, kg (lb)

(5) Statements regarding the importance of operation and maintenance. (Instructions regarding which statements must be used are provided in appendix I, section 2.), and

(6) The manufacturer and the identification of the model.

(j)(1) An affected facility permanently labeled under paragraph (e), (f)(3), or (g) of this section have attached to it a temporary label that shall contain only the information provided for in appendix I, section 2.3, 2.4, or 2.5, as applicable.

(2) The temporary label of an affected facility permently labeled under paragraph (b), (c), (e), (f)(3), or (g) of this section shall:

(i) Be affixed to a location on the wood heater that is readily seen and accessible when the wood heater is offered for sale to consumers by any commercial owner;

(ii) Not be combined with any other label or information;

(iii) Be attached to the wood heater in such a way that it can be easily removed by the consumer upon purchase, except that the label on wood heaters displayed by a commercial owner may have an adhesive backing or other means to preserve the label to prevent its removal or destruction;

(iv) Be printed on 90 pound bond paper in black ink with a white background except that those for models that are not otherwise exempted which do not meet the applicable emission limits, or have not been tested pursuant to this subpart, shall be on a red background as described in appendix I, section 2.5;

(v) Have dimensions of 12.7 centimeters by 17.8 centimeters (5 inches by 7 inches) as described in appendix I, section 2.1;

(vi) Have wording, presentation of the graphic data, and typography as presented in appendix I.

(k)(1) Each affected facility offered for sale by a commercial owner must be accompanied by an owner's manual that shall contain the information listed in paragraph (k)(2) of this section (pertaining to installation), and paragraph (k)(3) of this section (pertaining to operation and maintenance) of this section. Such information shall be adequate to enable consumers to achieve optimal emissions performance. Such information shall be consistent with the operating instructions provided by the manufacturer to the laboratory for operating the wood heater during certification testing, except for details of the certification test that would not be relevant to the ultimate purchaser.

(2) Installation information: Requirements for achieving proper draft.

(3) Operation and maintenance information:

(i) Wood loading procedures, recommendations on wood selection, and warnings on what fuels not to use, such as treated wood, colored paper, cardboard, solvents, trash and garbage,

(ii) Fire starting procedures,

(iii) Proper use of air controls,

(iv) Ash removal procedures,

(v) Instructions on gasket replacement,

(vi) For catalytic models, information on the following pertaining to the catalytic combustor: Procedures for achieving and maintaining catalyst activity, maintenance procedures, procedures for determining deterioration or failure, procedures for replacement, and information on how to exercise warranty rights, and

(vii) For catalytic models, the following statement—

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against the law to operate this wood heater in a manner inconsistent with operating instructions in this manual, or if the catalytic element is deactivated or removed.

(4) Any manufacturer using EPA model language contained in appendix I to satisfy any requirement of this paragraph shall be in compliance with that requirement, provided that the particular model language is printed in full, with only such changes as are necessary to ensure accuracy for the particular model line.

(l) Wood heaters that are affected by this subpart, but that have been owned and operated by a noncommercial owner, are not subject to paragraphs (j)

and (k) of this section when offered for resale.

[53 FR 5873, Feb. 26, 1988, as amended at 53 FR 12009, Apr. 12, 1988; 64 FR 7466, Feb. 12, 1999; 65 FR 61764, Oct. 17, 2000]

§ 60.537 Reporting and recordkeeping.

(a)(1) Each manufacturer who holds a certificate of compliance under § 60.533(e) or (h) for a model line shall maintain records containing the information required by this paragraph with respect to that model line. Each manufacturer of a model line certified under § 60.530(c) shall maintain the information required by paragraphs (a)(3) and (a)(5) of this section for that model line.

(2)(i) All documentation pertaining to the certification test used to obtain certification, including the full test report and raw data sheets, laboratory technician notes, calculations, and the test results for all test runs.

(ii) Where a model line is certified under § 60.533(h) and later certified under § 60.533(e), all documentation pertaining to the certification test used to obtain certification in each instance shall be retained.

(3) For parameter inspections conducted pursuant to § 60.533(o)(2), information indicating the extent to which tolerances for components that affect emissions as listed in § 60.533(k)(2) were inspected, and at what frequency, the results of such inspections, remedial actions taken, if any, and any follow-up actions such as additional inspections,

(4) For emissions tests conducted pursuant to § 60.533(o)(3), all test reports, data sheets, laboratory technician notes, calculations, and test results for all test runs, the remedial actions taken, if any, and any follow-up actions such as additional testing,

(5) The number of affected facilities that are sold each year, by certified model line,

(b)(1) Each accredited laboratory shall maintain records consisting of all documentation pertaining to each certification test, including the full test report and raw data sheets, technician notes, calculations, and the test results for all test runs.

(2) [Reserved]

(3) Each accredited laboratory shall report to the Administrator within 24 hours whenever a manufacturer which has notified the laboratory that it intends to apply for alternative certification for a model line fails to submit on schedule a representative unit of that model line for certification testing.

(c) Any wood heater upon which certification tests were performed based upon which certification was granted under § 60.533(e) shall be retained (sealed and unaltered) at the manufacturer's facility for as long as the model line in question is manufactured. Any such wood heater shall be made available upon request to the Administrator for inspection and testing.

(d)–(e) [Reserved]

(f) Each manufacturer of an affected facility certified under § 60.533 shall submit a report to the Administrator every 2 years following issuance of a certificate of compliance for each model line. This report shall certify that no changes in the design or manufacture of this model line have been made that require recertification under § 60.533(k).

(g) Each manufacturer shall maintain records of the model and number of wood heaters exempted under § 60.530(f).

(h) Each commercial owner of a wood heater previously owned by a noncommercial owner for his personal use shall maintain records of the name and address of the previous owner.

(i)(1) Unless otherwise specified, all records required under this section shall be maintained by the manufacturer or commercial owner of the affected facility for a period of no less than 5 years.

(2) Unless otherwise specified, all reports to the Administrator required under this subpart shall be made to: Stationary Source Compliance Division (EN–341), U.S. EPA, 1200 Pennsylvania Ave., NW., Washington, DC 20460 Attention: Wood Heater Program.

(3) A report to the Administrator required under this subpart shall be deemed to have been made when it is properly addressed and mailed, or

placed in the possession of a commercial courier service.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995]

§ 60.538 Prohibitions.

(a) No person shall operate an affected facility that does not have affixed to it a permanent label pursuant to § 60.536 (b), (c), (e), (f)(2), (f)(3), or (g)(2).

(b) No manufacturer shall advertise for sale, offer for sale, or sell an affected facility that—

(1) Does not have affixed to it a permanent label pursuant to § 60.536, and

(2) Has not been tested when required by § 60.533(n).

(c) On or after July 1, 1990, no commercial owner shall advertise for sale, offer for sale, or sell an affected facility that does not have affixed to it a permanent label pursuant to § 60.536 (b), (c), (e), (f)(1), (f)(3), (g)(1) or (g)(2). No person shall advertise for sale, offer for sale, or sell an affected facility labeled under § 60.536(f)(1) except for export.

(d)(1) No commercial owner shall advertise for sale, offer for sale or sell an affected facility permanently labeled under § 60.536 (b) or (c) unless:

(i) The affected facility has affixed to it a removable label pursuant to § 60.536 of this subpart,

(ii) He provides any purchaser or transferee with an owner's manual pursuant to § 60.536(k) of this subpart, and

(iii) He provides any purchaser or transferee with a copy of the catalytic combustor warranty (for affected facilities with catalytic combustors).

(2) No commercial owner shall advertise for sale, offer for sale, or sell an affected facility permanently labeled under § 60.536 (e), (f)(3), or (g), unless the affected facility has affixed to it a removable label pursuant to § 60.536 of this subpart. This prohibition does not apply to wood heaters affected by this subpart that have been previously owned and operated by a noncommercial owner.

(3) A commercial owner other than a manufacturer complies with the requirements of paragraph (d) of this section if he—

(i) Receives the required documentation from the manufacturer or a previous commercial owner and

(ii) Provides that documentation unaltered to any person to whom the wood heater that it covers is sold or transferred.

(e)(1) In any case in which the Administrator revokes a certificate of compliance either for the knowing submission of false or inaccurate information or other fraudulent acts, or based on a finding under § 60.533(l)(1)(ii) that the certification test was not valid, he may give notice of that revocation and the grounds for it to all commercial owners.

(2) From and after the date of receipt of the notice given under paragraph (e)(1) of this section, no commercial owner may sell any wood heater covered by the revoked certificate (other than to the manufacturer) unless

(i) The wood heater has been tested as required by § 60.533(n) and labeled as required by § 60.536(g) or

(ii) The model line has been recertified in accordance with this subpart.

(f) No person shall install or operate an affected facility except in a manner consistent with the instructions on its permanent label and in the owner's manual pursuant to § 60.536(l) of this subpart.

(g) No person shall operate an affected facility which was originally equipped with a catalytic combustor if the catalytic element is deactivated or removed.

(h) No person shall operate an affected facility that has been physically altered to exceed the tolerance limits of its certificate of compliance.

(i) No person shall alter, deface, or remove any permanent label required to be affixed pursuant to § 60.536 of this subpart.

[53 FR 5873, Feb. 26, 1988; 53 FR 14889, Apr. 26, 1988, as amended at 63 FR 64874, Nov. 24, 1998]

§ 60.539 Hearing and appeal procedures.

(a)(1) In any case where the Administrator—

(i) Denies an application under § 60.530(c) or § 60.533(e),

(ii) Issues a notice of revocation of certification under § 60.533(l),

(iii) Denies an application for laboratory accreditation under § 60.535, or

(iv) Issues a notice of revocation of laboratory accreditation under

§ 60.535(e), the manufacturer or laboratory affected may request a hearing under this section within 30 days following receipt of the required notification of the action in question.

(2) In any case where the Administrator issues a notice of revocation under § 60.533(p), the manufacturer may request a hearing under this section with the time limits set out in § 60.533(p)(5).

(b) Any hearing request shall be in writing, shall be signed by an authorized representative of the petitioning manufacturer or laboratory, and shall include a statement setting forth with particularity the petitioner's objection to the Administrator's determination or proposed determination.

(c)(1) Upon receipt of a request for a hearing under paragraph (a) of this section, the Administrator shall request the Chief Administrative Law Judge to designate an Administrative Law Judge as Presiding Officer for the hearing. If the Chief Administrative Law Judge replies that no Administrative Law Judge is available to perform this function, the Administrator shall designate a Presiding Officer who has not had any prior responsibility for the matter under review, and who is not subject to the direct control or supervision of someone who has had such responsibility.

(2) The hearing shall commence as soon as practicable at a time and place fixed by the Presiding Officer.

(3)(i) A motion for leave to intervene in any proceeding conducted under this section must set forth the grounds for the proposed intervention, the position and interest of the movant and the likely impact that intervention will have on the expeditious progress of the proceeding. Any person already a party to the proceeding may file an answer to a motion to intervene, making specific reference to the factors set forth in the foregoing sentence and paragraph (c)(3)(iii) of this section within ten (10) days after service of the motion for leave to intervene.

(ii) A motion for leave to intervene in a proceeding must ordinarily be filed before the first prehearing conference or, in the absence of a prehearing conference, prior to the setting of a time and place for a hearing. Any motion filed after that time must include, in addition to the information set forth in paragraph (c)(3)(i) of this section, a statement of good cause for the failure to file in a timely manner. The intervenor shall be bound by any agreements, arrangements and other matters previously made in the proceeding.

(iii) A motion for leave to intervene may be granted only if the movant demonstrates that his presence in the proceeding would not unduly prolong or otherwise prejudice the adjudication of the rights of the original parties, and that movant may be adversely affected by a final order. The intervenor shall become a full party to the proceeding upon the granting of leave to intervene.

(iv) Persons not parties to the proceeding may move for leave to file amicus curiae briefs. The movant shall state his interest and the reasons why the proposed amicus brief is desirable. If the motion is granted, the Presiding Officer or Administrator shall issue an order setting the time for filing such brief. An amicus curia may participate in any briefing after his motion is granted, and shall be served with all briefs, reply briefs, motions, and orders relating to issues to be briefed.

(4) In computing any period of time prescribed or allowed in this subpart, the day of the event from which the designated period begins to run shall not be included. Saturdays, Sundays, and Federal legal holidays shall be included. When a stated time expires on a Saturday, Sunday or legal holiday, the stated time period shall be extended to include the next business day.

(d)(1) Upon his appointment the Presiding Officer shall establish a hearing file. The file shall consist of the notice issued by the Administrator under § 60.530(c), § 60.533(e), § 60.533(l), § 60.533(p), § 60.535(a), or § 60.535(e), together with any accompanying material, the request for a hearing and the supporting data submitted therewith, and all documents relating to the request for certification or accreditation, or the proposed revocation of either.

(2) The hearing file shall be available for inspection by any party, to the extent authorized by law, at the office of

the Presiding Officer, or other place designated by him.

(e) Any party may appear in person, or may be represented by counsel or by any other duly authorized representative.

(f)(1) The Presiding Officer upon the request of any party, or at his discretion, may order a prehearing conference at a time and place specified by him to consider the following:

(i) Simplification of the issues,

(ii) Stipulations, admissions of fact, and the introduction of documents,

(iii) Limitation of the number of expert witnesses,

(iv) Possibility of agreement disposing of all or any of the issues in dispute,

(v) Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.

(2) The results of the conference shall be reduced to writing by the Presiding Officer and made part of the record.

(g)(1) Hearings shall be conducted by the Presiding Officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the Presiding Officer of irrelevant, immaterial and repetitious evidence.

(2) Witnesses will not be required to testify under oath. However, the Presiding Officer shall call to the attention of witnesses that their statements may be subject to penalties under title 18, U.S.C. 1001 for knowingly making false statements or representations or using false documents in any matter within the jurisdiction of any department or agency of the United States.

(3) Any witness may be examined or cross-examined by the Presiding Officer, the parties, or their representatives.

(4) Hearings shall be recorded verbatim. Copies of transcripts of proceedings may be purchased by the applicant from the reporter.

(5) All written statements, charts, tabulations, and similar data offered in evidence at the hearings shall, upon a showing satisfactory to the Presiding Officer of their authenticity, relevancy, and materiality, be received in evidence and shall constitute a part of the record.

(h)(1) The Presiding Officer shall make an initial decision which shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the record. The findings, conclusions, and written decision shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the Environmental Appeals Board without further proceedings unless there is an appeal to the Environmental Appeals Board or motion for review by the Environmental Appeals Board. Except as provided in paragraph (h)(3) of this section, any such appeal shall be taken within 20 days of the date the initial decision was filed.

(2) The Administrator delegates authority to the Environmental Appeals Board to issue final decisions in appeals filed under this section. An appeal 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 section referring to the Environmental Appeals Board shall be interpreted as referring to the Administrator. On appeal from or review of the initial decision, the Environmental Appeals Board shall have all the powers that it would have in making the initial decision including the discretion to require or allow briefs, oral argument, the taking of additional evidence or the remanding to the Presiding Officer for additional proceedings. The decision by the Environmental Appeals Board shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the appeal or considered in the review.

(3) In any hearing requested under paragraph (a)(2) of this section the Presiding Officer shall render his initial decision within 60 days of that request.

Any appeal to the Environmental Appeals Board shall be taken within 10 days of the initial decision, and the Environmental Appeals Board shall render its decision in the appeal within 30 days of the filing of the appeal.

[53 FR 5873, Feb. 26, 1988, as amended at 57 FR 5328, Feb. 13, 1992]

§ 60.539a Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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 shall not be delegated to states:

(1) [Reserved]

(2) Section 60.531, Definitions,

(3) Section 60.533, Compliance and certification,

(4) Section 60.534, Test methods and procedures,

(5) Section 60.535, Laboratory accreditation,

(6) Section 60.536(i)(2), determination of emission rates for purposes of labeling wood heaters certified under § 60.530(c),

(7) Section 60.537, Reporting and recordkeeping,

(8) Section 60.538(e), revocation of certification, and

(9) Section 60.539, Hearings and appeals procedures.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995]

§ 60.539b General provisions exclusions.

The following provisions of subpart A of part 60 do not apply to this subpart:

(a) Section 60.7,

(b) Section 60.8(a), (c), (d), (e), and (f), and

(c) Section 60.15(d).

Subpart BBB—Standards of Performance for the Rubber Tire Manufacturing Industry

SOURCE: 52 FR 34874, Sept. 15, 1987, unless otherwise noted.

§ 60.540 Applicability and designation of affected facilities.

(a) The provisions of this subpart, except as provided in paragraph (b) of this section, apply to each of the following affected facilities in rubber tire manufacturing plants that commence construction, modification, or reconstruction after January 20, 1983: each undertread cementing operation, each sidewall cementing operation, each tread end cementing operation, each bead cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C automatic operation.

(b) The owner or operator of each undertread cementing operation and each sidewall cementing operation in rubber tire manufacturing plants that commenced construction, modification, or reconstruction after January 20, 1983, and before September 15, 1987, shall have the option of complying with the alternate provisions in § 60.542a. This election shall be irreversible. The alternate provisions in § 60.542a do not apply to any undertread cementing operation or sidewall cementing operation that is modified or reconstructed after September 15, 1987. The affected facilities in this paragraph are subject to all applicable provisions of this subpart.

(c) Although the affected facilities listed under § 60.540(a) are defined in reference to the production of components of a ''tire,'' as defined under § 60.541(a), the percent emission reduction requirements and VOC use cutoffs specified under § 60.542(a)(1), (2), (6), (7)(iii), (7)(iv), (8), (9), and (10) refer to the total amount of VOC used (the amount allocated to the affected facility), including the VOC used in cements and organic solvent-based green tire spray materials for tire types not listed in the § 60.541(a) definition of ''tire.''

[52 FR 34874, Sept. 15, 1987, as amended at 54 FR 38635, Sept. 19, 1989]

§ 60.541 Definitions.

(a) 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.

Bead means rubber-covered strands of wire, wound into a circular form, which ensure a seal between a tire and the rim of the wheel onto which the tire is mounted.

Bead cementing operation means the system that is used to apply cement to the bead rubber before or after it is wound into its final circular form. A bead cementing operation consists of a cement application station, such as a dip tank, spray booth and nozzles, cement trough and roller or swab applicator, and all other equipment necessary to apply cement to wound beads or bead rubber and to allow evaporation of solvent from cemented beads.

Component means a piece of tread, combined tread/sidewall, or separate sidewall rubber, or other rubber strip that is combined into the sidewall of a finished tire.

Drying area means the area where VOC from applied cement or green tire sprays is allowed to evaporate.

Enclosure means a structure that surrounds a VOC (cement, solvent, or spray) application area and drying area, and that captures and contains evaporated VOC and vents it to a control device. Enclosures may have permanent and temporary openings.

Green tire means an assembled, uncured tire.

Green tire spraying operation means the system used to apply a mold release agent and lubricant to the inside and/or outside of green tires to facilitate the curing process and to prevent rubber from sticking to the curing press. A green tire spraying operation consists of a booth where spraying is performed, the spray application station, and related equipment, such as the lubricant supply system.

Michelin-A operation means the operation identified as Michelin-A in the Emission Standards and Engineering Division confidential file as referenced in Docket A–80–9, Entry II–B–12.

Michelin-B operation means the operation identified as Michelin-B in the Emission Standards and Engineering Division confidential file as referenced in Docket A–80–9, Entry II–B–12.

Michelin-C-automatic operation means the operation identifed as Michelin-C-automatic in the Emission Standards and Engineering Division confidential file as referenced in Docket A–80–9, Entry II–B–12.

Month means a calendar month or a prespecified period of 28 days or 35 days (utilizing a 4–4–5-week recordkeeping and reporting schedule).

Organic solvent-based green tire spray means any mold release agent and lubricant applied to the inside or outside of green tires that contains more than 12 percent, by weight, of VOC as sprayed.

Permanent opening means an opening designed into an enclosure to allow tire components to pass through the enclosure by conveyor or other mechanical means, to provide access for permanent mechanical or electrical equipment, or to direct air flow into the enclosure. A permanent opening is not equipped with a door or other means of obstruction of air flow.

Sidewall cementing operation means the system used to apply cement to a continuous strip of sidewall component or any other continuous strip component (except combined tread/sidewall component) that is incorporated into the sidewall of a finished tire. A sidewall cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to sidewall strips or other continuous strip component (except combined tread/sidewall component) and to allow evaporation of solvent from the cemented rubber.

Temporary opening means an opening into an enclosure that is equipped with a means of obstruction, such as a door, window, or port, that is normally closed.

Tire means any agricultural, airplane, industrial, mobile home, light-duty truck and/or passenger vehicle tire that has a bead diameter less than or equal to 0.5 meter (m) (19.7 inches) and a cross section dimension less than or equal to 0.325 m (12.8 in.), and that is mass produced in an assembly-line fashion.

Tread end cementing operation means the system used to apply cement to one or both ends of the tread or combined tread/sidewall component. A tread end cementing operation consists of a cement application station and all other

equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread ends and to allow evaporation of solvent from the cemented tread ends.

Undertread cementing operation means the system used to apply cement to a continuous strip of tread or combined tread/sidewall component. An undertread cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread or combined tread/sidewall strips and to allow evaporation of solvent from the cemented tread or combined tread/sidewall.

VOC emission control device means equipment that destroys or recovers VOC.

VOC emission reduction system means a system composed of an enclosure, hood, or other device for containment and capture of VOC emissions and a VOC emission control device.

Water-based green tire spray means any mold release agent and lubricant applied to the inside or outside of green tires that contains 12 percent or less, by weight, of VOC as sprayed.

(b) Notations used under this subpart are defined below:

B_o=total number of beads cemented at a particular bead cementing affected facility for a month

C_a=concentration of VOC in gas stream in vents after a control device (parts per million by volume)

C_b=concentration of VOC in gas stream in vents before a control device (parts per million by volume)

C_f=concentration of VOC in each gas stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (parts per million by volume)

D_c=density of cement or spray material (grams per liter (lb per gallon))

D_r=density of VOC recovered by an emission control device (grams per liter (lb per gallon))

E=emission control device efficiency, inlet versus outlet (fraction)

F_c=capture efficiency, VOC captured and routed to one control device versus total VOC used for an affected facility (fraction)

F_o=fraction of total mass of VOC used in a month by all facilities served by a common cement or spray material distribution system that is used by a particular affected facility served by the common distribution system

G=monthly average mass of VOC used per tire cemented or sprayed with a water-based green tire spray for a particular affected facility (grams (lb) per tire)

G_b=monthly average mass of VOC used per bead cemented for a particular bead cementing affected facility (grams (lb) per bead)

L_c=volume of cement or spray material used for a month (liters (gallons))

L_r=volume of VOC recovered by an emission control device for a month (liters (gallons))

M=total mass of VOC used for a month by all facilities served by a common cement or spray material distribution system (grams (lb))

M_o=total mass of VOC used at an affected facility for a month (grams (lb))

M_r=mass of VOC recovered by an emission control device for a month (grams (lb))

N=mass of VOC emitted to the atmosphere per tire cemented or sprayed with a water-based green tire spray for an affected facility for a month (grams (lb) per tire)

N_b=mass of VOC emitted per bead cemented for an affected facility for a month (grams (lb) per bead)

Q_a=volumetric flow rate in vents after a control device (dry standard cubic meters (dry standard cubic feet) per hour)

Q_b=volumetric flow rate in vents before a control device (dry standard cubic meters (dry standard cubic feet) per hour)

Q_f=volumetric flow rate of each stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (dry standard cubic meters (dry standard cubic feet) per hour)

R=overall efficiency of an emission reduction system (fraction)

T_d=total number of days in monthly compliance period (days)

T_o=total number of tires cemented or sprayed with water-based green tire sprays at a particular affected facility for a month

W_o=weight fraction of VOC in a cement or spray material.

[52 FR 34874, Sept. 15, 1987, as amended at 65 FR 61764, Oct. 17, 2000]

§ 60.542 Standards for volatile organic compounds.

(a) On and after the date on which the initial performance test, required by § 60.8, is completed, but no later than 180 days after initial startup, each owner or operator subject to the provisions of this subpart shall comply with the following conditions:

(1) For each undertread cementing operation:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 3,870 kg (8,531 lb) of VOC per 28 days,

(B) 4,010 kg (8,846 lb) of VOC per 29 days,

(C) 4,150 kg (9,149 lb) of VOC per 30 days,

(D) 4,280 kg (9,436 lb) of VOC per 31 days, or

(E) 4,840 kg (10,670 lb) of VOC per 35 days.

(2) For each sidewall cementing operation:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 3,220 kg (7,099 lb) of VOC per 28 days,

(B) 3,340 kg (7,363 lb) of VOC per 29 days,

(C) 3,450 kg (7,606 lb) of VOC per 30 days,

(D) 3,570 kg (7,870 lb) of VOC per 31 days, or

(E) 4,030 kg (8,885 lb) of VOC per 35 days.

(3) For each tread end cementing operation: Discharge into the atmosphere no more than 10 grams (0.022 lb) of VOC per tire cemented for each month.

(4) For each bead cementing operation: Discharge into the atmosphere no more than 5 grams (0.011 lb) of VOC per bead cemented for each month.

(5) For each green tire spraying operation where only water-based sprays are used:

(i) Discharge into the atmosphere no more than 1.2 grams (0.0026 lb) of VOC per tire sprayed with an inside green tire spray for each month; and

(ii) Discharge into the atmosphere no more than 9.3 grams (0.021 lb) of VOC per tire sprayed with an outside green tire spray for each month.

(6) For each green tire spraying operation where only ogranic solvent-based sprays are used:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 3,220 kg (7,099 lb) of VOC per 28 days,

(B) 3,340 kg (7,363 lb) of VOC per 29 days,

(C) 3,450 kg (7,606 lb) of VOC per 30 days,

(D) 3,570 kg (7,870 lb) of VOC per 31 days, or

(E) 4,030 kg (8,885 lb) of VOC per 35 days.

(7) For each green tire spraying operation where both water-based and organic solvent-based sprays are used:

(i) Discharge into the atmosphere no more than 1.2 grams (0.0026 lb) of VOC per tire sprayed with a water-based inside green tire spray for each month; and

(ii) Discharge into the atmosphere no more than 9.3 grams (0.021 lb) of VOC per tire sprayed with a water-based outside green tire spray for each month; and either

(iii) Discharge into the atmosphere no more than 25 percent of the VOC used in the organic solvent-based green tire sprays (75 percent emission reduction) for each month; or

(iv) Maintain total (uncontrolled) VOC use for all organic solvent-based green tire sprays less than or equal to the levels specified under paragraph (a)(6)(ii) of this section.

(8) For each Michelin-A operation:

(i) Discharge into the atmosphere no more than 35 percent of the VOC used (65 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 1,570 kg (3,461 lb) of VOC per 28 days,

(B) 1,630 kg (3,593 lb) of VOC per 29 days,

(C) 1,690 kg (3,726 lb) of VOC per 30 days,

(D) 1,740 kg (3,836 lb) of VOC per 31 days, or

(E) 1,970 kg (4,343 lb) of VOC per 35 days.

(9) For each Michelin-B operation:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 1,310 kg (2,888 lb) of VOC per 28 days,

(B) 1,360 kg (2,998 lb) of VOC per 29 days,

(C) 1,400 kg (3,086 lb) of VOC per 30 days,

(D) 1,450 kg (3,197 lb) of VOC per 31 days, or

(E) 1,640 kg (3,616 lb) of VOC per 35 days.

(10) For each Michelin-C-automatic operation:

(i) Discharge into the atmosphere no more than 35 percent of the VOC used (65 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified under paragraph (a)(8)(ii) of this section.

[52 FR 34874, Sept. 15, 1987, as amended at 65 FR 61764, Oct. 17, 2000]

§ 60.542a Alternate standard for volatile organic compounds.

(a) On and after the date on which the initial performance test, required by § 60.8, is completed, but no later than 180 days after September 19, 1989, each owner or operator subject to the provisions in § 60.540(b) shall not cause to be discharged into the atmosphere more than: 25 grams (0.055 lb) of VOC per tire processed for each month if the operation uses 25 grams (0.055 lb) or less of VOC per tire processed and does not employ a VOC emission reduction system.

(b) [Reserved]

[54 FR 38635, Sept. 19, 1989, as amended at 65 FR 61765, Oct. 17, 2000]

§ 60.543 Performance test and compliance provisions.

(a) Section 60.8(d) does not apply to the monthly performance test procedures required by this subpart. Section 60.8(d) does apply to initial performance tests and to the performance tests specified under paragraphs (b)(2) and (b)(3) of this section. Section 60.8(f) does not apply when Method 24 is used.

(b) Performance tests shall be conducted as follows:

(1) The owner or operator of an affected facility shall conduct an initial performance test, as required under § 60.8(a), except as described under paragraph (j) of this section. The owner or operator of an affected facility shall thereafter conduct a performance test each month, except as described under paragraphs (b)(4), (g)(1), and (j) of this section. Initial and monthly performance tests shall be conducted according to the procedures in this section.

(2) The owner or operator of an affected facility who elects to use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), as described under paragraphs (f) and (g) of this section, shall repeat the performance test when directed by the Administrator or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of overall reduction efficiency. The performance test shall be conducted in accordance with the procedures described under paragraphs (f)(2) (i) through (iv) of this section.

(3) The owner or operator of an affected facility who seeks to comply with the equipment design and performance specifications, as described under paragraph (j) of this section, shall repeat the performance test when directed by the Administrator or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of control device efficiency or measurement of capture system retention time or face velocity. The performance test shall be conducted in accordance with the procedures described under paragraph (f)(2)(ii) of this section.

(4) The owner or operator of each tread end cementing operation and each green tire spraying operation using only water-based sprays (inside and/or outside) containing less than 1.0

percent, by weight, of VOC is not required to conduct a monthly performance test as described in paragraph (d) of this section. In lieu of conducting a monthly performance test, the owner or operator of each tread end cementing operation and each green tire spraying operation shall submit formulation data or the results of Method 24 analysis annually to verify the VOC content of each tread end cement and each green tire spray material, provided the spraying formulation has not changed during the previous 12 months. If the spray material formulation changes, formulation data or Method 24 analysis of the new spray shall be conducted to determine the VOC content of the spray and reported within 30 days as required under § 60.546(j).

(c) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation where the owner or operator seeks to comply with the uncontrolled monthly VOC use limits, the owner or operator shall use the following procedure to determine compliance with the applicable (depending upon duration of compliance period) uncontrolled monthly VOC use limit specified under § 60.542(a)(1)(ii), (2)(ii), (6)(ii), (7)(iv), (8)(ii), (9)(ii), and (10)(ii). If both undertread cementing and sidewall cementing are performed at the same affected facility during a month, then the kg/mo limit specified under § 60.542(a)(1)(ii) shall apply for that month.

(1) Determine the density and weight fraction VOC (including dilution VOC) of each cement or green tire spray from its formulation or by analysis of the cement or green tire spray using Method 24. If a dispute arises, the Administrator may require an owner or operator who used formulation data to analyze the cement or green tire spray using Method 24.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) by the following procedure:

(i) For each affected facility for which cement or green tire spray is delivered in batch or via a distribution system that serves only the affected facility:

$$M_o = \sum_{i=1}^{a} L_{c_i} D_{c_i} W_{o_i}$$

Where:

"a" equals the number of different cements or green tire sprays used during the month that are delivered in batch or via a distribution system that serves only a single affected facility.

(ii) For each affected facility for which cement or green tire spray is delivered via a common distribution system that also serves other affected or existing facilities:

(A) Calculate the total mass of VOC used for all of the facilities served by the common distribution system for the month (M):

$$M = \sum_{i=1}^{b} L_{c_i} D_{c_i} W_{o_i}$$

Where:

"b" equals the number of different cements or green tire sprays used during the month that are delivered via a common distribution system that also serves other affected or existing facilities.

(B) Determine the fraction (F_o) of M used at the affected facility by comparing the production records and process specifications for the material cemented or sprayed at the affected facility for the month to the production records and process specifications for the material cemented or sprayed at all other facilities served by the common distribution system for the month or by another procedure acceptable to the Administrator.

(C) Calculate the total monthly mass of VOC used at the affected facility for the month (M_o):

$M_o = MF_o$

(3) Determine the time duration of the monthly compliance period (T_d).

(d) For each tread end cementing operation and each green tire spraying operation where water-based cements or sprays containing 1.0 percent, by weight, of VOC or more are used (inside and/or outside) that do not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with

the VOC emission per tire limit specified under § 60.542 (a)(3), (a)(5)(i), (a)(5)(ii), (a)(7)(i), and (a)(7)(ii).

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under paragraph (c)(2) of this section.

(3) Determine the total number of tires cemented or sprayed at the affected facility for the month (T_o) by the following procedure:

(i) For a trend end cementing operation, T_o equals the number of tread or combined tread/sidewall components that receive an application of tread end cement for the month.

(ii) For a green tire spraying operation that uses water-based inside green tire sprays, T_o equals the number of green tires that receive an application of water-based inside green tire spray for the month.

(iii) For a green tire spraying operation that uses water-based outside green tire sprays, T_o equals the number of green tires that receive an application of water-based outside green tire spray for the month.

(4) Calculate the mass of VOC used per tire cemented or sprayed at the affected facility for the month (G):

$$G = \frac{M_o}{T_o}$$

(5) Calculate the mass of VOC emitted per tire cemented or sprayed at the affected facility for the month (N):

$N = G$

(e) For each bead cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the VOC emission per bead limit specified under § 60.542(a)(4).

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under paragraph (c)(2) of this section.

(3) Determine the number of beads cemented at the affected facility during the month (B_o) using production records; B_o equals the number of beads that receive an application of cement for the month.

(4) Calculate the mass of VOC used per bead cemented at the affected facility for the month (G_b):

$$G_b = \frac{M_o}{B_o}$$

(5) Calculate the mass of VOC emitted per bead cemented at the affected facility for the month (N_b):

$N_b = G_b$

(f) For each tread end cementing operation and each bead cementing operation that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under § 60.542(a) (3) and (4).

(1) Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under paragraphs (d) (1) through (4) of this section, or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under paragraphs (e) (1) through (4) of this section.

(2) Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemented for the affected facility for the month (N_b):

$N = G\ (1\text{-}R)$
$N_b = G_b\ (1\text{-}R)$

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under paragraphs (f)(2) (i) through (iv) of this section. After the initial performance test, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test. No monthly performance tests are required. The performance test shall be repeated during conditions described under paragraph (b)(2) of this section.

(i) The owner or operator of an affected facility shall construct a temporary enclosure around the application and drying areas during the performance test for the purpose of capturing fugitive VOC emissions. The enclosure must be maintained at a negative pressure to ensure that all evaporated VOC are measurable. Determine the fraction (F_c) of total VOC used at the affected facility that enters the control device:

$$F_c = \frac{\sum_{i=1}^{m} C_{b_i} Q_{b_i}}{\sum_{i=1}^{m} C_{b_i} Q_{b_i} + \sum_{i=1}^{n} C_{f_i} Q_{f_i}}$$

Where:

"m" is the number of vents from the affected facility to the control device, and "n" is the number of vents from the affected facility to the atmosphere and from the temporary enclosure.

(ii) Determine the destruction efficiency of the control device (E) by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device:

$$E = \frac{\sum_{i=1}^{m} C_{b_i} Q_{b_i} - \sum_{i=1}^{p} C_{a_i} Q_{a_i}}{\sum_{i=1}^{m} C_{b_i} Q_{b_i}}$$

Where:

"m" is the number of vents from the affected facility to the control device, and "p" is the number of vents after the control device.

(iii) Determine the overall reduction efficiency (R):

$R = EF_c$

(iv) The owner or operator of an affected facility shall have the option of substituting the following procedure as an acceptable alternative to the requirements prescribed under paragraph (f)(2)(i) of this section. This alternative procedure is acceptable only in cases where a single VOC is used and is present in the capture system. The average capture efficiency value derived from a minimum of three runs shall constitute a test.

(A) For each run, "i," measure the mass of the material containing a single VOC used. This measurement shall be made using a scale that has both a calibration and a readability to within 1 percent of the mass used during the run. This measurement may be made by filling the direct supply reservoir (e.g., trough, tray, or drum that is integral to the operation) and related application equipment (e.g., rollers, pumps, hoses) to a marked level at the start of the run and then refilling to the same mark from a more easily weighed container (e.g., separate supply drum) at the end of the run. The change in mass of the supply drum would equal the mass of material used from the direct supply reservoir. Alternatively, this measurement may be made by weighing the direct supply reservoir at the start and end of the run or by weighing the direct supply reservoir and related application equipment at the start and end of the run. The change in mass would equal the mass of the material used in the run. If only the direct supply reservoir is weighed, the amount of material in or on the related application equipment must be the same at the start and end of the run. All additions of VOC containing material made to the direct supply reservoir during a run must be properly accounted for in determining the mass of material used during that run.

(B) For each run, "i," measure the mass of the material containing a single VOC which is present in the direct supply reservoir and related application equipment at the start of the run, unless the ending weight fraction VOC in the material is greater than or equal to 98.5 percent of the starting weight fraction VOC in the material, in which case, this measurement is not required. This measurement may be made directly by emptying the direct supply reservoir and related application equipment and then filling them to a marked level from an easily weighed container (e.g. separate supply drum). The change in mass of the supply drum would equal the mass of material in the filled direct supply reservoir and related application equipment. Alternatively, this measurement may be made by weighing the direct supply

reservoir and related application equipment at the start of the run and subtracting the mass of the empty direct supply reservoir and related application equipment (tare weight).

(C) For each run, ''i,'' the starting weight fraction VOC in the material shall be determined by Method 24 analysis of a sample taken from the direct supply reservoir at the beginning of the run.

(D) For each run, ''i,'' the ending weight fraction VOC in the material shall be determined by Method 24 analysis of a sample taken from the direct supply reservoir at the end of the run.

(E) For each run, ''i,'' in which the ending weight fraction VOC in the material is greater than or equal to 98.5 percent of the starting weight fraction VOC in the material, calculate the mass of the single VOC used (Mi) by multiplying the mass of the material used in the run by the starting weight fraction VOC of the material used in the run.

(F) For each run, ''i,'' in which the ending weight fraction VOC in the material is less than 98.5 percent of the starting weight fraction VOC in the material, calculate the mass of the single VOC used (M_i) as follows:

(*1*) Calculate the mass of VOC present in the direct supply reservoir and related application equipment at the start of the run by multiplying the mass of material in the direct supply reservoir and related application equipment at the start of the run by the starting weight fraction VOC in the material for that run.

(*2*) Calculate the mass of VOC present in the direct supply reservoir and related application equipment at the end of the run by multiplying the mass of material in the direct supply reservoir and related application equipment at the end of the run by the ending weight fraction VOC in the material for that run. The mass of material in the direct supply reservoir and related application equipment at the end of the run shall be calculated by subtracting the mass of material used in the run from the mass of material in the direct supply reservoir and related application equipment at the start of the run.

(*3*) The mass of the single VOC used (M_i) equals the mass of VOC present in the direct supply reservoir and related application equipment at the start of the run minus the mass of VOC present in the direct supply reservoir and related application equipment at the end of the run.

(G) If Method 25A is used to determine the concentration of the single VOC in the capture system, then calculate the capture efficiency (FC_i) for each run, ''i,'' as follows:

$$FC_i = \frac{C_i \frac{W}{V} Q_i}{(M_i)(10^6)}$$

Where:

C_i = Average concentration of the single VOC in the capture system during run ''i'' (parts per million by volume) corrected for background VOC (see § 60.547(a)(5)).

W = Molecular weight of the single VOC, mg/mg-mole (lb/lb-mole).

V = The volume occupied by one mole of ideal gas at standard conditions [20 °C, 760 mm Hg] on a wet basis, 2.405×10^{-5} m^3/mg-mole (385.3 ft^3/lb-mole).

Q_i = Volumetric flow in the capture system during run i, on a wet basis, adjusted to standard conditions, m^3 (ft^3) (see § 60.547(a)(5)).

10^6 = ppm per unity.

M_i = Mass of the single VOC used during run i, mg (lb).

(H) If Method 25 is used to determine the concentration of the single VOC in the capture system, then calculate the capture efficiency (FC_i) for each run, ''i,'' as follows:

$$FC_i = \frac{\frac{C_i}{(NC)(10^6)} \frac{(W)(Q_i)}{(V)}}{M_i}$$

Where: C_i = Average concentration of the single VOC in the capture system during run "i" (parts per million, as carbon, by volume) corrected for background VOC (see § 60.547(a)(5)).

W = Molecular weight of the single VOC, mg/mg-mole (lb/lb-mole).

V = The volume occupied by one mole of ideal gas at standard conditions [20 °C, 760 mm Hg] on a wet basis, 2.405×10^{-5} m^3/mg-mole (385.3 ft^3/lb-mole).

Q_i = Volumetric flow in the capture system during run i, on a wet basis, adjusted to standard conditions, m^3 (ft^3) (see § 60.547(a)(5)).

10^6 = ppm per unity.

M_i = Mass of the single VOC used during run i, mg (lb).

NC = Number of carbon atoms in one molecule of the single VOC.

(I) Calculate the average capture efficiency value, F_c as follows:

$$F_c = \frac{\sum_{i=1}^{n} FC_i}{n}$$

Where:

"n" equals the number of runs made in the test ($n \geq 3$). In cases where an alternative procedure in this paragraph is used, the requirements in paragraphs (f)(2) (ii) and (iii) of this section remain unchanged.

(g) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the percent emission reduction requirement specified under § 60.542 (a) (1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), and (10)(i).

(1) For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under paragraphs (f)(2) (i) through (iii) of this section. The performance test shall be repeated during conditions described under paragraph (b)(2) of this section. No monthly performance tests are required.

(h) For each tread end cementing operation and each bead cementing operation that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under § 60.542(a) (3) and (4).

(1) Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under paragraphs (d) (1) through (4) of this section, or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under paragraphs (e) (1) through (4) of this section.

(2) Calculate the total mass of VOC recovered from the affected facility for the month (M_r):

$M_r = L_r D_r$

(3) Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month:

$$R = \frac{M_r}{M_o}$$

(4) Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemeted at the affected facility for the month (N_b):

$N = G\ (1\text{-}R)$

$N_b = G_b\ (1\text{-}R)$

(i) For each undertread cementing operation, each sidewall cemeting operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that uses a VOC emission reduction system with a control device that recovers (VOC) (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the percent reduction requirement specified under § 60.542(a)(1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), and (10)(i).

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as described under paragraph (c)(2) of this section.

(3) Calculate the total mass of VOC recovered from the affected facility for the month (M_r) as described under paragraph (h)(2) of this section.

(4) Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month as described under paragraph (h)(3) of this section.

(j) Rather than seeking to demonstrate compliance with the provisions of § 60.542(a) (1)(i), (2)(i), (6)(i), (7)(iii), or (9)(i) using the performance test procedures described under paragraphs (g) and (i) of this section, an owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that use a VOC emission reduction system may seek to demonstrate compliance by meeting the equipment design and performance specifications listed under paragraphs (j)(1), (2), and (4) through (6) or under paragraphs (j)(1) and (3) through (6) of this section, and by conducting a control device efficiency performance test to determine compliance as described under paragraph (j)(7) of this section. The owner or operator shall conduct this performance test of the control device efficiency no later than 180 days after initial startup of the affected facility, as specified under § 60.8(a). Meeting the capture system design and performance specifications, in conjunction with operating a 95 percent efficient control device, is an acceptable means of demonstrating compliance with the standard. Therefore, the requirement for the initial performance test on the enclosure, as specified under § 60.8(a), is waived. No monthly performance tests are required.

(1) For each undertread cementing operation, each sidewall cementing operation, and each Michelin-B operation, the cement application and drying area shall be contained in an enclosure that meets the criteria specified under paragraphs (j) (2), (4), and (5) of this section; for each green tire spraying operation where organic solvent-based sprays are used, the spray application and drying area shall be contained in an enclosure that meets the criteria specified under paragraphs (j) (3), (4), and (5) of this section.

(2) The drying area shall be enclosed between the application area and the water bath or to the extent necessary to contain all tire components for at least 30 seconds after cement application, whichever distance is less.

(3) Sprayed green tires shall remain in the enclosure for a minimum of 30 seconds after spray application.

(4) A minimum face velocity of 30.5 meters (100 feet) per minute shall be maintained continuously through each permanent opening into the enclosure when all temporary enclosure openings are closed. The cross-sectional area of each permanent opening shall be divided into at least 12 equal areas, and a velocity measurement shall be performed at the centroid of each equal area with an anemometer or similar velocity monitoring device; the face velocity of each permanent opening is the average value of the velocity measurements taken. The monitoring device shall be calibrated and operated according to the manufacturer's instructions.

Temporary enclosure openings shall remain closed at all times except when worker access is necessary.

(5) The total area of all permanent openings into the enclosure shall not exceed the area that would be necessary to maintain the VOC concentration of the exhaust gas stream at 25

percent of the lower explosive limit (LEL) under the following conditions:

(i) The facility is operating at the maximum solvent use rate;

(ii) The face velocity through each permanent opening is 30.5 meters (100 feet) per minute; and

(iii) All temporary openings are closed.

(6) All captured VOC are ducted to a VOC emission control device that is operated on a continuous basis and that achieves at least a 95 percent destruction or recovery efficiency.

(7) The efficiency of the control device (E) for the initial performance test is determined by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device as described under paragraph (f)(2)(ii) of this section. The control device efficiency shall be redetermined during conditions specified under paragraph (b)(3) of this section.

(k) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under § 60.542(a)(1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), or (10)(i) and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limit specified under § 60.542(a)(1)(ii), (2)(ii), (6)(ii), (7)(iv), (8)(ii), (9)(ii), or (10)(ii) shall demonstrate, using the procedures described under paragraph (c) of this section, that the total VOC use at the affected facility has not exceeded the applicable total (uncontrolled) monthly VOC use limit during each of the last 6 months of operation. The owner or operator shall be subject to the applicable percent emission reduction requirement until the conditions of this paragraph and § 60.546(h) are satisfied.

(l) In determining compliance for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation, the owner or operator shall include all the VOC used, recovered, or destroyed from cements and organic solvent-based green tire sprays including those cements or sprays used for tires other than those defined under § 60.541(a).

(m) In determining compliance for each tread end cementing operation, each bead cementing operation, and each green tire spraying operation, the owner or operator shall include only those tires defined under § 60.541(a) when determining T_o and B_o.

(n) For each undertread cementing operation and each sidewall cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the VOC emission per tire limit specified in § 60.542a:

(1) Calculate the total mass of VOC (M_o) used at the affected facility for the month by the following procedure.

(i) For each affected facility for which cement is delivered in batch or via a distribution system which serves only that affected facility:

$$M_o = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi}$$

Where: "n" equals the number of different cements or sprays used during the month.

(ii) For each affected facility for which cement is delivered via a common distribution system which also serves other affected or existing facilities.

(A) Calculate the total mass (M) of VOC used for all of the facilities served by the common distribution system for the month:

$$M = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi}$$

Where: "n" equals the number of different cements or sprays used during the month.

(B) Determine the fraction (F_o) of "M" used by the affected facility by comparing the production records and process specifications for the material cemented at the affected facility for the month to the production records and process specifications for the material cemented at all other facilities

served by the common distribution system for the month or by another procedure acceptable to the Administrator.

(C) Calculate the total monthly mass of VOC(M_o) used at the affected facility:

$$M_o = MF_o$$

(2) Determine the total number of tires (T_o) processed at the affected facility for the month by the following procedure.

(i) For undertread cementing, T_o equals the number of tread or combined tread/sidewall components which receive an application of undertread cement.

(ii) For sidewall cementing, T_o equals the number of sidewall components which receive an application of sidewall cement, divided by 2.

(3) Calculate the mass of VOC used per tire processed (G) by the affected facility for the month:

$$G = \frac{M_o}{T_o}$$

(4) Calculate the mass of VOC emitted per tire processed (N) for the affected facility for the month:

$$N = G$$

(5) Where the value of the mass of VOC emitted per tire processed (N) is less than or equal to the VOC emission per tire limit specified under § 60.542a, the affected facility is in compliance.

[52 FR 34874, Sept. 15, 1987; 52 FR 37874, Oct. 9, 1987, as amended at 54 FR 38635, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.544 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder for the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of 1 percent of the temperature being measured in °C or ±0.5 °C, whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder, for the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of 1 percent of the temperature being measured in °C or ±0.5 °C, whichever is greater.

(3) For an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation where a carbon adsorber is used to meet the performance requirements specified under § 60.543(j)(6), an organics monitoring device used to indicate the concentration level of organic compounds based on a detection principle such as infrared, photoionization, or thermal conductivity, equipped with a continous recorder, for the outlet of the carbon bed.

(b) An owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation where a VOC recovery device other than a carbon adsorber is used to meet the performance requirements specified under § 60.543(j)(6), shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[52 FR 34874, Sept. 15, 1987, as amended at 65 FR 61765, Oct. 17, 2000]

§ 60.545 Recordkeeping requirements.

(a) Each owner or operator of an affected facility that uses a thermal incinerator 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 for which the average temperature of the gas stream in

the combustion zone was more than 28 °C (50 °F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the affected facility was in compliance.

(b) Each owner or operator of an affected facility that uses a catalytic incinerator 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 for which the average temperature measured before the catalyst bed is more than 28 °C (50 °F) below the gas stream temperature measured before the catalyst bed during the most recent determination of destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance, and records of all 3-hour periods for which the average temperature difference across the catalyst bed is less than 80 percent of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance.

(c) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that uses a carbon adsorber to meet the requirements specified under § 60.543(j)(6) shall maintain continuous records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases is more than 20 percent greater than the exhaust gas concentration level 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 affected facility was in compliance.

(d) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tires spraying operation where organic solvent-based sprays are used, Michelin-A operation, Michelin-B operation, or Michelin-C-automatic operation who seeks to comply with a specified VOC monthly usage limit shall maintain records of monthly VOC use and the number of days in each compliance period.

(e) Each owner or operator that is required to conduct monthly performance tests, as specified under § 60.543(b)(1), shall maintain records of the results of all monthly tests.

(f) Each owner or operator of a tread end cementing operation and green tire spraying operation using water-based cements or sprays containing less than 1.0 percent by weight of VOC, as specified under § 60.543(b)(4), shall maintain records of formulation data or the results of Method 24 analysis conducted to verify the VOC content of the spray.

[52 FR 34874, Sept. 15, 1987, as amended at 54 FR 38637, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.546 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart, at the time of notification of the anticipated initial startup of an affected facility pursuant to § 60.7(a)(2), shall provide a written report to the Administrator declaring for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C automatic operation the emission limit he intends to comply with and the compliance method (where § 60.543(j) is applicable) to be employed.

(b) Each owner or operator subject to the provisions of this subpart, at the time of notification of the anticipated initial startup of an affected facility pursuant to § 60.7(a)(2), shall specify the monthly schedule (each calendar month or a 4-4-5-week schedule) to be used in making compliance determinations.

(c) Each owner or operator subject to the provisions of this subpart shall report the results of all initial performance tests, as required under § 60.8(a), and the results of the performance tests required under § 60.543 (b)(2) and (b)(3). The following data shall be included in the report for each of the above performance tests:

(1) For each affected facility for which the owner or operator seeks to comply with a VOC monthly usage limit specified under § 60.542(a): The monthly mass of VOC used (M_o) and the number of days in the compliance period (T_d).

(2) For each affected facility that seeks to comply with a VOC emission limit per tire or per bead specified under § 60.542(a) without the use of a VOC emission reduction system: the mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC emitted per tire cemented or sprayed (N), the number of beads cemeted (B_o), and the mass of VOC emitted per bead cemented (N_b).

(3) For each affected facility that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator) to comply with a VOC emission limit per tire or per bead specified under § 60.542(a): The mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC emitted per tire cemented or sprayed (N), the number of beads cemented (B_o), the mass of VOC emitted per bead cemented (N_b), the mass of VOC used per tire cemented or sprayed (G), the mass of VOC per bead cemented (G_b), the emission control device efficiency (E), the capture system efficiency (F_c), the face velocity through each permanent opening for the capture system with the temporary openings closed, and the overall system emission reduction (R).

(4) For each affected facility that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator) to comply with a percent emission reduction requirement specified under § 60.542(a): The emission control device efficiency (E), the capture system efficiency (F_c), the face velocity through each permanent opening in the capture system with the temporary openings closed, and the overall system emission reduction (R).

(5) For each affected facility that uses a carbon adsorber to comply with a VOC emission limit per tire or per bead specified under § 60.542(a): The mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC used per tire cemented or sprayed (G), the number of beads cemented (B_o), the mass of VOC used per bead (G_b), the mass of VOC recovered (M_r), the overall system emission reduction (R), the mass of VOC emitted per tire cemented or sprayed (N), and the mass of VOC emitted per bead cemented (N_b).

(6) For each affected facility that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber) to comply with a percent emission reduction requirement specified under § 60.542(a): The mass of VOC used (M_o), the mass of VOC recovered (M_r), and the overall system emission reduction (R).

(7) For each affected facility that elects to comply with the alternate limit specified under § 60.542a: The mass of VOC used (M_o), the number of tires processed (T_o), and the mass of VOC emitted per tire processed (N).

(d) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation who seeks to comply with the requirements described under § 60.543(j) shall include in the initial compliance report a statement specifying, in detail, how each of the equipment design and performance specifications has been met. The initial compliance report also shall include the following data: The emission control device efficiency (E), the face velocity through each permanent enclosure opening with all temporary enclosure openings closed, the total area of all permanent enclosure openings, the total area of all temporary enclosure openings, the maximum solvent use rate (kg/hr or lb/hr), the type(s) of VOC used, the lower explosive limit (LEL) for each VOC used, and the length of time each component is enclosed after application of cement or spray material.

(e) Each owner or operator of an affected facility shall include the following data measured by the required monitoring device(s), as applicable, in the report for each performance test specified under paragraph (c) of this section.

(1) The average combustion temperature measured at least every 15 minutes and averaged over the performance test period of incinerator destruction efficiency for each thermal incinerator.

(2) The average temperature before and after the catalyst bed measured at least every 15 minutes and averaged over the performance test period of incinerator destruction efficiency for each catalytic incinerator.

(3) The concentration level or reading indicated by the organics monitoring device at the outlet of the adsorber, measured at least every 15 minutes and averaged over the performance test period of carbon adsorber recovery efficiency while the vent stream is normally routed and constituted.

(4) The appropriate data to be specified by the Administrator where a VOC recovery device other than a carbon adsorber is used.

(f) Once every 6 months each owner or operator subject to the provisions of § 60.545 shall report, as applicable:

(1) Each monthly average VOC emission rate that exceeds the VOC emission limit per tire or per bead specified under § 60.542(a), as applicable for the affected facility.

(2) Each monthly average VOC use rate that exceeds the monthly VOC usage limit specified under § 60.542(a), as applicable for the affected facility.

(3) Each monthly average VOC emission reduction efficiency for a VOC recovery device (e.g., carbon adsorber) less than the percent efficiency limit specified under § 60.542(a), as applicable for the affected facility.

(4) Each 3-hour period of operation for which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the affected facility was in compliance.

(5) Each 3-hour period of operation for which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the gas stream temperature measured before the catalyst bed during the most recent determination of the destruction efficiency of the catalyst incinerator that demonstrated that the affected facility was in compliance, and any 3-hour period for 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 temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance.

(6) Each 3-hour period of operation during which the average concentration level or reading of VOC's in the exhaust gases from a carbon adsorber is more than 20 percent greater than the exhaust gas concentration level 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 affected facility was in compliance.

(g) The requirements for semiannual reports remain in force until and unless EPA, in delegating enforcement authority to a State under Section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with these requirements, provided that they comply with the requirements established by the State.

(h) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under § 60.542(a) and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limit specified under § 60.542(a) and who has satisfied the provisions specified under § 60.543(k) shall furnish the Administrator written notification no less than 30 days in advance of the date when he intends to be subject to the

applicable VOC use limit instead of the applicable percent emission reduction requirement.

(i) The owner or operator of each undertread cementing operation and each sidewall cementing operation who qualifies for the alternate provisions as described in § 60.542a, shall furnish the Administrator written notification of the election no less than 60 days after September 19, 1989.

(j) The owner or operator of each tread end cementing operation and each green tire spraying (inside and/or outside) operation using water-based sprays containing less than 1.0 percent, by weight, of VOC as described in § 60.543(b)(1) shall furnish the Administrator, within 60 days initially and annually thereafter, formulation data or Method 24 results to verify the VOC content of the water-based sprays in use. If the spray formulation changes before the end of the 12-month period, formulation data or Method 24 results to verify the VOC content of the spray shall be reported within 30 days of the change.

[52 FR 34874, Sept. 15, 1987; 52 FR 37874, Oct. 9, 1987, as amended at 54 FR 38637, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.547 Test methods and procedures.

(a) The test methods in appendix A to this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.542(a) as follows:

(1) Method 24 or formulation data for the determination of the VOC content of cements or green tire spray materials. In the event of dispute, Method 24 shall be the reference method. For Method 24, the cement or green tire spray sample shall be a 1-liter sample collected in a 1-liter container at a point where the sample will be representative of the material as applied in the affected facility.

(2) Method 25 as the reference method for the determination of the VOC concentrations in each stack, both entering and leaving an emission control device. The owner or operator shall notify the Administrator at least 30 days in advance of any test by Method 25. For Method 25, the sampling time for each of three runs shall be at least 1 hour. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the duct or at a point no closer to the walls than 1.0 meter (3.3 feet). The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) (0.11 dry standard cubic feet (dscf)) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(3) Method 2, 2A, 2C, or 2D, as appropriate, as the reference method for determination of the flow rate of the stack gas. The measurement site shall be the same as for the Method 25 sampling. A velocity traverse shall be made once per run within the hour that the Method 25 sample is taken.

(4) Method 4 for determination of stack gas moisture.

(5) Method 25 or Method 25A for determination of the VOC concentration in a capture system prior to a control device when only a single VOC is present (see § 60.543 (f)(2)(iv)(G) and (f)(2)(iv)(H)). The owner or operator shall notify the Administrator at least 30 days in advance of any test by either Method 25 or Method 25A. Method 1 shall be used to select the sampling site and the sampling point shall be the centroid of the duct or at a point no closer to the walls than 1.0 meter (3.3 feet). Method 2, 2A, 2C, or 2D, as appropriate, shall be used as the test method for the concurrent determination of gas flow rate in the capture system.

(i) For Method 25, the sampling time for each run shall be at least 1 hour. For each run, a concurrent sample shall be taken immediately upwind of the application area to determine the background VOC concentration of air drawn into the capture system. Subtract this reading from the reading obtained in the capture system for that run. The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) (0.11 dry standard cubic feet (dscf)) except that shorter sampling times or smaller volumes, when necessitated by process variable or other factors, may be approved by the Administrator. Use Method 3 to determine the moisture content of the stack gas.

(ii) For Method 25A, the sampling time for each run shall be at least 1 hour. Instrument calibration shall be

performed by the procedure given in Method 25A using the single VOC present in the capture system. A different calibration gas may be used if the results are corrected using an experimentally determined response factor comparing the alternative calibration gas to the single VOC used in the process. After the instrument has been calibrated, determine the background VOC concentration of the air drawn into the capture system immediately upwind of the application area for each run. The instrument does not need to be recalibrated for the background measurement. Subtract this reading from the reading obtained in the capture system for that run. The Method 25A results shall only be used in the alternative procedure for determination of capture efficiency described under § 60.543(f)(2)(iv)(G).

[52 FR 34874, Sept. 15, 1987, as amended at 54 FR 38638, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.548 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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) Authority which will not be delegated to States: § 60.543(c)(2)(ii)(B).

Subpart CCC [Reserved]

Subpart DDD—Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry

SOURCE: 55 FR 51035, Dec. 11, 1990, unless otherwise noted.

§ 60.560 Applicability and designation of affected facilities.

(a) *Affected facilities*. The provisions of this subpart apply to affected facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in § 60.561 of this subpart. The affected facilities designated below for polypropylene and polyethylene are inclusive of all equipment used in the manufacture of these polymers, beginning with raw materials preparation and ending with product storage, and cover all emissions emanating from such equipment.

(1) For process emissions from any polypropylene and polyethylene manufacturing process that uses a continuous process, the affected facilities are each of the following process sections: each raw materials preparation section, each polymerization reaction section, each material recovery section, each product finishing section, and each product storage section. These process sections are affected facilities for process emissions that are emitted continuously and for process emissions that are emitted intermittently.

(2) For process emissions from polystyrene manufacturing processes that use a continuous process, the affected facilities are each material recovery section. These process sections are affected facilities for only those process emissions that are emitted continuously.

(3) For process emissions from poly(ethylene terephthalate) manufacturing processes that use a continuous process, the affected facilities are each polymerization reaction section. If the process uses dimethyl terephthalate, then each material recovery section is also an affected facility. If the process uses terephthalic acid, then each raw materials preparation section is also an affected facility. These process sections are affected facilities for only those process emissions that are emitted continuously.

(4) For VOC emissions from equipment leaks from polypropylene, polyethylene, and polystyrene (including expandable polystyrene) manufacturing processes, the affected facilities are each group of fugitive emissions equipment (as defined in § 60.561) within any process unit (as defined in § 60.561). This subpart does not apply to VOC emissions from equipment leaks from poly(ethylene terephthalate) manufacturing processes.

(i) Affected facilities with a design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) shall be exempt from § 60.562–2.

(ii) Addition or replacement of equipment for the purposes of improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under § 60.562–2.

(b) *Applicability dates*. The applicability date identifies when an affected facility becomes subject to a standard. Usually, a standard has a single applicability date. However, some polypropylene and polyethylene affected facilities have a September 30, 1987, applicability date and others have a January 10, 1989, applicability date. The following paragraphs identify the applicability dates for all affected facilities subject to this subpart.

(1) *Polypropylene and polyethylene*. Each process section in a polypropylene or polyethylene production process is a potential affected facility for both continuous and intermittent emissions. The applicability date depends on when the process section was constructed, modified, or reconstructed and, in some instances, on the type of production process.

(i) The applicability date for any polypropylene or polyethylene affected facility that is constructed, modified, or reconstructed after January 10, 1989, regardless of the type of production process being used, is January 10, 1989.

(ii) Only some polypropylene or polyethylene process sections that are constructed, modified, or reconstructed on or before January 10, 1989, but after September 30, 1987, are affected facilities. These process sections (and the type of emissions to be controlled) are identified by an ''x'' in table 1. The applicability date for the process sections (and the emissions to be controlled) that are identified by an ''x'' in table 1 is September 30, 1987. Since the affected facilities that have a September 30, 1987, applicability date are determined by the type of production process (e.g., liquid phase, gas phase), each owner or operator shall identify the particular production process that applies to his or her particular process.

Polymer	Production process(es)	Process section	Emissions	
			Continuous	Intermittent
Polypropylene	Liquid Phase	Raw Materials Preparation	X	
		Polymerization Reaction	X	
		Material Recovery	X	X
		Product Finishing	X	
		Product Storage.		
Polypropylene	Gas Phase	Raw Materials Preparation.		
		Polymerization Reaction		X
		Material Recovery	X	
		Product Finishing.		
		Product Storage.		
Low Density Polyethylene	High Pressure	Raw Materials Preparation		X
		Polymerization Reaction		X
		Material Recovery		X
		Product Finishing		X
		Product Storage		X
Low Density Polyethylene	Low Pressure	Raw Materials Preparation	X	X
High Density Polyethylene	Gas Phase	Polymerization Reaction		X
		Material Recovery.		
		Product Finishing	X	
		Product Storage.		
High Density Polyethylene	Liquid Phase Slurry	Raw Materials Preparation		X
		Polymerization Reaction.		
		Material Recovery	X	
		Product Finishing	X	
		Product Storage.		
High Density Polyethylene	Liquid Phase Solution	Raw Materials Preparation	X	X
		Polymerization Reaction		X
		Material Recovery	X	X
		Product Finishing.		
		Product Storage		

(2) *Polystyrene*. The applicability date for each polystyrene affected facility is September 30, 1987.

(3) *Poly(ethylene terephthalate)*. The applicability date for each poly(ethylene terephthalate) affected facility is September 30, 1987.

(c) Any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after its applicability date as identified under paragraph (b) of this section is subject to the requirements of this subpart, except as provided in paragraphs (d) through (f) of this section.

(d) Any polypropylene or polyethylene affected facility with a September 30, 1987, applicability date that commenced construction, modification, or reconstruction after September 30, 1987, and on or before January 10, 1989, with an uncontrolled emission rate (as defined in footnote a to table 2) at or below those identified in table 2 is not subject to the requirements of § 60.562–1 unless and until its uncontrolled emission rate exceeds that rate listed for it in table 2 or it is modified or reconstructed after January 10, 1989. At such time, such facility becomes subject to § 60.562–1 and the procedures identified in § 60.562–1(a) shall be used to determine the control of emissions from the facility.

TABLE 2—MAXIMUM UNCONTROLLED THRESHOLD EMISSION RATES [a]

Production process	Process section	Uncontrolled emission rate, kg TOC/Mg product (See associated footnote)
Polypropylene, liquid phase process	Raw Materials Preparation	0.15 [b]
	Polymerization Reaction	0.14 [b], 0.24 [c]
	Material Recovery	0.19 [b]
	Product Finishing	1.57 [b]
Polypropylene, gas phase process	Polymerization Reaction	0.12 [c]
	Material Recovery	0.02 [b]
Low Density Polyethylene, low pressure process	Raw Materials Preparation	0.41 [d]
	Polymerization Reaction	(e)
	Material Recovery	(e)
	Product Finishing	(e)
	Product Storage	(e)
Low Density Polythylene, low pressure process	Raw Materials Preparation	0.05 [f]
	Polymerization Reaction	0.03 [g]
	Product Finishing	0.01 [b]
High Density Polyethylene, liquid phase slurry process.	Raw Materials Preparation	0.25 [c]
	Material Recovery	0.11 [b]
	Product Finishing	0.41 [b]
High Density Polyethylene, liquid phase solution process.	Raw Materials Preparation	0.24 [f]
	Polymerization Reaction	0.16 [c]
	Material Recovery	1.68 [f]
High Density Polyethylene, gas phase process	Raw Materials Preparation	0.05 [f]
	Polymerization Reaction	0.03 [g]
	Product Finishing	0.01 [b]
Polystyrene, continuous process	Material Recovery	0.05 [b,h]
Poly(ethylene terephalate), dimethyl terephthalate process.	Material Recovery	0.12 [b,h]
	Polymerization Reaction	1.80 [h,i,j]
Poly(ethlyene terephthalate), terephthalic acid process.	Raw Materials Preparation	(l)
	Polymerization Reaction	1.80 [h,j,m] 3.92 [h,k,m]

[a] "Uncontrolled emission rate" refers to the emission rate of a vent stream that vents directly to the atmosphere and to the emission rate of a vent stream to the atmosphere that would occur in the absence of any add-on control devices but after any material recovery devices that constitute part of the normal material recovery operations in a process line where potential emissions are recovered for recycle or resale.

[b] Emission rate applies to continuous emissions only.

[c] Emission rate applies to intermittent emissions only.

[d] Total emission rate for non-emergency intermittent emissions from raw materials preparation, polymerization reaction, material recovery, product finishing, and product storage process sections.

[e] See footnote d.

[f] Emission rate applies to both continuous and intermittent emissions.

[g] Emission rate applies to non-emergency intermittent emissions only.

[h] Applies to modified or reconstructed affected facilities only.

[i] Includes emissions from the cooling water tower.

[j] Applies to a process line producing low viscosity poly(ethylene terephthlalate).
[k] Applies to a process line producing high viscosity poly(ethylene terephathalate).
[l] See footnote m.
[m] Applies to the sum of emissions to the atmosphere from the polymerization reaction section (including emissions from the cooling tower) and the raw materials preparation section (i.e., the esterifiers).

(e)(1) Modified or reconstructed affected facilities at polystyrene and poly(ethylene terephthalate) plants with uncontrolled emission rates at or below those identified in table 2 are exempt from the requirements of § 60.562–1 unless and until its uncontrolled emission rate exceeds that rate listed for it in table 2. This exemption does not apply to new polystyrene or poly(ethylene terephthalate) affected facilities.

(2) Emissions from modified or reconstructed affected facilities that are controlled by an existing control device and that have uncontrolled emission rates greater than the uncontrolled threshold emission rates identified in table 2 are exempt from the requirements of § 60.562–1 unless and until the existing control device is modified, reconstructed, or replaced.

(f) No process section of an experimental process line is considered an affected facility for continuous or intermittent process emissions.

(g) Individual vent streams that emit continuous emissions with uncontrolled annual emissions of less than 1.6 Mg/yr (1.76 ton/yr) or with a weight percent TOC of less than 0.10 percent from a new, modified, or reconstructed polypropylene or polyethylene affected facility are exempt from the requirements of § 60.562–1(a)(1). If at a later date, an individual stream's uncontrolled annual emissions become 1.6 Mg/yr (1.76 ton/yr) or greater (if the stream was exempted on the basis of the uncontrolled annual emissions exemption) or VOC concentration becomes 0.10 weight percent or higher (if the stream was exempted on the basis of the VOC concentration exemption), then the stream is subject to the requirements of § 60.562–1.

(h) Emergency vent streams, as defined in § 60.561, from a new, modified, or reconstructed polypropylene or polyethylene affected facility are exempt from the requirements of § 60.562–1(a)(2).

(i) An owner or operator of a polypropylene or polyethylene affected facility that commenced construction, modification, or reconstruction after September 30, 1987, and on or before January 10, 1989, and that is in a process line in which more than one type of polyolefin (i.e., polypropylene, low density polyethylene, high density polyethylene, or their copolymers) is produced shall select one of the polymer/production process combinations in table 1 for purposes of determining applicable affected facilities and uncontrolled threshold emissions rates.

(j) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart G, for continuous process vents that are subject to this subpart, that choose to comply with § 60.562–1(a)(1)(i)(A), (B), or (C) as allowed in § 60.562–1(a)(1) and (b)(1)(iii). The requirements of 40 CFR part 65, subpart G, satisfy the requirements of paragraph (c) of this section and §§ 60.563 through 60.566, except for § 60.565(g)(1). Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart G, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (j)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart G, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart G, must comply with 40 CFR part 65, subpart A.

(3) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart G, at initial startup shall notify the Administrator of the specific provisions of 40 CFR part 65, subpart G, with

which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial startup required by 40 CFR 65.5(b).

(NOTE: The numerical emission limits in these standards are expressed in terms of total organic compounds, measured as total organic compounds less methane and ethane.)

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991, as amended at 65 FR 61765, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.561 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 60, or in subpart VV of part 60, and the following terms shall have the specific meanings given them.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(a) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, as reflected by the following equation: $A = Y \times (B \div 100)$;

(b) The percent Y is determined from the following equation: $Y = 1.0 - 0.57 \log X$, where X is 1986 minus the year of construction; and

(c) The applicable basic annual asset guideline repair allowance, B, is equal to 12.5.

Car-sealed means, for purposes of these standards, a seal that is placed on the device used to change the position of a valve (e.g., from opened 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.

Closed vent system means a system that is not open to the 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.

Continuous emissions means any gas stream containing VOC that is generated essentially continuously when the process line or any piece of equipment in the process line is operating.

Continuous process means a polymerization process in which reactants are introduced in a continuous manner and products are removed either continuously or intermittently at regular intervals so that the process can be operated and polymers produced essentially continuously.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Copolymer means a polymer that has two different repeat units in its chain.

Decomposition means, for the purposes of these standards, an event in a polymerization reactor that advances to the point where the polymerization reaction becomes uncontrollable, the polymer begins to break down (decompose), and it becomes necessary to relieve the reactor instantaneously in order to avoid catastrophic equipment damage or serious adverse personnel safety consequences.

Decomposition emissions refers to those emissions released from a polymer production process as the result of a decomposition or during attempts to prevent a decomposition.

Emergency vent stream means, for the purposes of these standards, an intermittent emission that results from a decomposition, attempts to prevent decompositions, power failure, equipment failure, or other unexpected cause that requires immediate venting of gases from process equipment in order to avoid safety hazards or equipment damage. This includes intermittent vents that occur from process equipment where normal operating parameters (e.g., pressure or temperature) are exceeded such that the process equipment can not be returned to normal operating conditions using the design features of the system and venting must occur to avoid equipment failure or adverse safety personnel consequences and to minimize adverse effects of the runaway reaction. This does not include intermittent vents

that are designed into the process to maintain normal operating conditions of process vessels including those vents that regulate normal process vessel pressure.

End finisher means a polymerization reaction vessel operated under very low pressures, typically at pressures of 2 mm Hg (1 in. H_2O) or less, in order to produce high viscosity poly(ethylene terephthalate). An end finisher is preceded in a high viscosity poly(ethylene terephthalate) process line by one or more polymerization vessels operated under less severe vacuums, typically between 5 and 10 mm Hg (3 and 5 in. H_2O). A high viscosity poly(ethylene terephthalate) process line may have one or more end finishers.

Existing control device means, for the purposes of these standards, an air pollution control device that has been in operation on or before September 30, 1987, or that has been in operation between September 30, 1987, and January 10, 1989, on those continuous or intermittent emissions from a process section that is marked by an ''—'' in table 1 of this subpart.

Existing control device is reconstructed means, for the purposes of these standards, the capital expenditure of at least 50 percent of the replacement cost of the existing control device.

Existing control device is replaced means, for the purposes of these standards, the replacement of an existing control device with another control device.

Expandable polystyrene means a polystyrene bead to which a blowing agent has been added using either an in-situ suspension process or a post-impregnation suspension process.

Experimental process line means a polymer or copolymer manufacturing process line with the sole purpose of operating to evaluate polymer manufacturing processes, technologies, or products. An experimental process line does not produce a polymer or resin that is sold or that is used as a raw material for nonexperimental process lines.

Flame zone means that portion of the combustion chamber in a boiler occupied by the flame envelope.

Fugitive emissions equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by subpart VV of this part.

Gas phase process means a polymerization process in which the polymerization reaction is carried out in the gas phase; i.e., the monomer(s) are gases in a fluidized bed of catalyst particles and granular polymer.

High density polyethylene (HDPE) means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight and having a density of greater than 0.940 gm/cm^{3}3 (58.7 lb/ft^3).

High pressure process means the conventional production process for the manufacture of low density polyethylene in which a reaction pressure of about 15,000 psig (103,000 kPa gauge) or greater is used.

High viscosity poly(ethylene terephthalate) means poly(ethylene terephthalate) that has an intrinsic viscosity of 0.9 or higher and is used in such applications as tire cord and seat belts.

Incinerator means an enclosed combustion device that is used for destroying VOC.

In-situ suspension process means a manufacturing process in which styrene, blowing agent, and other raw materials are added together within a reactor for the production of expandable polystyrene.

Intermittent emissions means those gas streams containing VOC that are generated at intervals during process line operation and includes both planned and emergency releases.

Liquid phase process means a polymerization process in which the polymerization reaction is carried out in the liquid phase; i.e., the monomer(s) and any catalyst are dissolved, or suspended in a liquid solvent.

Liquid phase slurry process means a liquid phase polymerization process in which the monomer(s) are in solution (completely dissolved) in a liquid solvent, but the polymer is in the form of solid particles suspended in the liquid reaction mixture during the polymerization reaction; sometimes called a particle form process.

Liquid phase solution process means a liquid phase polymerization process in which both the monomer(s) and polymer are in solution (completely dissolved) in the liquid reaction mixture.

Low density polyethylene (LDPE) means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight and having a density of 0.940 g/cm^3 (58.7 lb/ft^3) or less.

Low pressure process means a production process for the manufacture of low density polyethylene in which a reaction pressure markedly below that used in a high pressure process is used. Reaction pressure of current low pressure processes typically go up to about 300 psig (2,070 kPa gauge).

Low viscosity poly(ethylene terephthalate) means a poly(ethylene terephthalate) that has an intrinsic viscosity of less than 0.75 and is used in such applications as clothing, bottle, and film production.

Material recovery section means the equipment that recovers unreacted or by-product materials from any process section for return to the process line, off-site purification or treatment, or sale. Equipment designed to separate unreacted or by-product material from the polymer product are to be included in this process section, provided at least some of the material is recovered for reuse in the process, off-site purification or treatment, or sale, at the time the process section becomes an affected facility. Otherwise such equipment are to be assigned to one of the other process sections, as appropriate. Equipment that treats recovered materials are to be included in this process section, but equipment that also treats raw materials are not to be included in this process section. The latter equipment are to be included in the raw materials preparation section. If equipment is used to return unreacted or by-product material directly to the same piece of process equipment from which it was emitted, then that equipment is considered part of the process section that contains the process equipment. If equipment is used to recover unreacted or by-product material from a process section and return it to another process section or a different piece of process equipment in the same process section or sends it off-site for purification, treatment, or sale, then such equipment are considered part of a material recovery section. Equipment used for the on-site recovery of ethylene glycol from poly(ethylene terephthalate) plants, however, are not included in the material recovery section, but are covered under the standards applicable to the polymerization reaction section (§ 60.562–1(c)(1)(ii)(A) or (2)(ii)(A)).

Operating day means, for the purposes of these standards, any calendar day during which equipment used in the manufacture of polymer was operating for at least 8 hours or one labor shift, whichever is shorter. Only operating days shall be used in determining compliance with the standards specified in § 60.562–1(c)(1)(ii)(B), (1)(ii)(C), (2)(ii)(B), and (2)(ii)(C). Any calendar day in which equipment is used for less than 8 hours or one labor shift, whichever is less, is not an ''operating day'' and shall not be used as part of the rolling 14-day period for determining compliance with the standards specified in § 60.562–1(c)(1)(ii)(B), (1)(ii)(C), (2)(ii)(B), and (2)(ii)(C).

Polyethylene means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight; see low density polyethylene and high density polyethylene.

Poly(ethylene terephthalate) (PET) means a polymer or copolymer comprised of at least 50 percent bis-(2-hydroxyethyl)-terephthalate (BHET) by weight.

Poly(ethylene terephthalate) (PET) manufacture using dimethyl terephthalate means the manufacturing of poly(ethylene terephthalate) based on the esterification of dimethyl terephthalate (DMT) with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate (BHET) that is subsequently polymerized to form PET.

Poly(ethylene terephthalate) (PET) manufacture using terephthalic acid means the manufacturing of poly(ethylene terephthalate) based on the esterification reaction of terephthalic acid (TPA) with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate (BHET) that is subsequently polymerized to form PET.

Polymerization reaction section means the equipment designed to cause monomer(s) to react to form polymers, including equipment designed primarily to cause the formation of short polymer chains (oligomers or low polymers), but not including equipment designed to prepare raw materials for polymerization, e.g., esterification vessels. For the purposes of these standards, the polymerization reaction section begins with the equipment used to transfer the materials from the raw materials preparation section and ends with the last vessel in which polymerization occurs. Equipment used for the on-site recovery of ethylene glycol from poly(ethylene terephthalate) plants, however, are included in this process section, rather than in the material recovery process section.

Polypropylene (PP) means a thermoplastic polymer or copolymer comprised of at least 50 percent propylene by weight.

Polystyrene (PS) means a thermoplastic polymer or copolymer comprised of at least 80 percent styrene or para-methylstyrene by weight.

Post-impregnation suspension process means a manufacturing process in which polystyrene beads are first formed in a suspension process, washed, dried, or otherwise finished and then added with a blowing agent to another reactor in which the beads and blowing agent are reacted to produce expandable polystyrene.

Process heater means a device that transfers heat liberated by burning fuel to fluids contained in tubular coils, including all fluids except water that is heated to produce steam.

Process line means a group of equipment assembled that can operate independently if supplied with sufficient raw materials to produce polypropylene, polyethylene, polystyrene, (general purpose, crystal, or expandable) or poly(ethylene terephthalate) or one of their copolymers. A process line consists of the equipment in the following process sections (to the extent that these process sections are present at a plant): raw materials preparation, polymerization reaction, product finishing, product storage, and material recovery.

Process section means the equipment designed to accomplish a general but well-defined task in polymer production. Process sections include raw materials preparation, polymerization reaction, material recovery, product finishing, and product storage and may be dedicated to a single process line or common to more than one process line.

Process unit means equipment assembled to perform any of the physical and chemical operations in the production of polypropylene, polyethylene, polystyrene, (general purpose, crystal, or expandable), or poly(ethylene terephthalate) or one of their copolymers. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. Examples of process units are raw materials handling and monomer recovery.

Product finishing section means the equipment that treats, shapes, or modifies the polymer or resin to produce the finished end product of the particular facility, including equipment that prepares the product for product finishing. For the purposes of these standards, the product finishing section begins with the equipment used to transfer the polymerized product from the polymerization reaction section and ends with the last piece of equipment that modifies the characteristics of the polymer. Product finishing equipment may accomplish product separation, extruding and pelletizing, cooling and drying, blending, additives introduction, curing, or annealing. Equipment used to separate unreacted or by-product material from the product are to be included in this process section, provided the material separated from the polymer product is not recovered at the time the process section becomes an affected facility. If the material is being recovered, then the separation equipment are to be included in the material recovery section. Product finishing does not include polymerization, the physical mixing of the pellets to obtain a homogenous mixture of the polymer (except as noted below), or the shaping (such as fiber spinning, molding, or fabricating) or modification (such as fiber stretching and crimping) of the finished end product. If physical

mixing occurs in equipment located between product finishing equipment (i.e., before all the chemical and physical characteristics have been ''set'' by virtue of having passed through the last piece of equipment in the product finishing section), then such equipment are to be included in this process section. Equipment used to physically mix the finished product that are located after the last piece of equipment in the product finishing section are part of the product storage section.

Product storage section means the equipment that is designed to store the finished polymer or resin end product of the particular facility. For the purposes of these standards, the product storage section begins with the equipment used to transfer the finished product out of the product finishing section and ends with the containers used to store the final product. Any equipment used after the product finishing section to recover unreacted or by-product material are to be considered part of a material recovery section. Product storage does not include any intentional modification of the characteristics of any polymer or resin product, but does include equipment that provide a uniform mixture of product, provided such equipment are used after the last product finishing piece of equipment. This process section also does not include the shipment of a finished polymer or resin product to another facility for further finishing or fabrication.

Raw materials preparation section means the equipment located at a polymer manufacturing plant designed to prepare raw materials, such as monomers and solvents, for polymerization. For the purposes of these standards, this process section begins with the equipment used to transfer raw materials from storage and recovered material from material recovery process sections, and ends with the last piece of equipment that prepares the material for polymerization. The raw materials preparation section may include equipment that accomplishes purification, drying, or other treatment of raw materials or of raw and recovered materials together, activation of catalysts, and esterification including the formation of some short polymer chains (oligomers), but does not include equipment that is designed primarily to accomplish the formation of oligomers, the treatment of recovered materials alone, or the storage of raw materials.

Recovery system means an individual unit or series of material recovery units, such as absorbers, condensers, and carbon adsorbers, used for recovering volatile organic compounds.

Total organic compounds (TOC) means those compounds measured according to the procedures specified in § 60.564.

Vent stream means any gas stream released to the atmosphere directly from an emission source or indirectly either through another piece of process equipment or a material recovery device that constitutes part of the normal recovery operations in a polymer process line where potential emissions are recovered for recycle or resale, and any gas stream directed to an air pollution control device. The emissions released from an air pollution control device are not considered a vent stream unless, as noted above, the control device is part of the normal material recovery operations in a polymer process line where potential emissions are recovered for recycle or resale.

Volatile organic compounds (VOC) means, for the purposes of these standards, any reactive organic compounds as defined in § 60.2 Definitions.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991; 56 FR 12299, Mar. 22, 1991; 65 FR 61767, Oct. 17, 2000]

§ 60.562–1 Standards: Process emissions.

(a) Polypropylene, low density polyethylene, and high density polyethylene. Each owner or operator of a polypropylene, low density polyethylene, or high density polyethylene process line containing a process section subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup whichever comes first.

(1) *Continuous emissions.* For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1), the owner or operator shall use the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section for determining which continuous emissions are to be controlled and which level of control listed in paragraph (a)(1)(i) of this section is to be met. The owner or operator shall use the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section each time a process section is constructed, modified, or reconstructed at the plant site.

(i) *Level of control* Continuous emission streams determined to be subject to control pursuant to the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section, as applicable, shall meet one of the control levels identified in paragraphs (a)(1)(i) (A) through (D) of this section. The procedures in paragraphs (a)(1) (ii) and (iii) of this section identify which level of control may be met. The level of control identified in paragraph (a)(1)(i)(D) of this section is limited to certain continuous emission streams, which are identified through the procedures in paragraphs (a)(1) (ii) and (iii) of this section.

(A) Reduce emissions of total organic compounds (minus methane and ethane) (TOC) by 98 weight percent, or to a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. The TOC is expressed as the sum of the actual compounds, not carbon equivalents. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the vent stream.

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater by introducing the vent stream into the flame zone of the boiler or process heater. (Note: A boiler or process heater of lesser design heat capacity may be used, but must demonstrate compliance with paragraph (a)(1)(i)(A) of this section.)

(C) Combust the emissions in a flare that meets the conditions specified in § 60.18. If the flare is used to control both continuous and intermittent emissions, the flare shall meet the conditions specified in § 60.18 at all times (i.e., which controlling continuous emissions alone or when controlling both continuous and intermittent emissions).

(D) Vent the emissions to a control device located on the plant site.

(ii) *Uncontrolled Continuous Emissions.* For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1) and that is not controlled in an existing control device, the owner or operator shall use the procedures identified in table 3 to identify those continuous emissions from each constructed, modified, or reconstructed affected facility that are to be controlled. The owner shall include in the procedure all uncontrolled continuous vent streams from previously constructed, modified, or reconstructed affected facilities at the plant site each time a process section is constructed, modified, or reconstructed at the plant site. In applying the procedures shown in table 3, the stream characteristics may be either measured or calculated as specified in § 60.564(d). For modified or reconstructed affected facilities, these stream characteristics are to be determined after a modification or reconstruction determination has been made by the Administrator, but before any actual changes have been undertaken, and then again after the actual changes have been made. Figure 1 provides a summary overview of the control determination procedure described in table 3.

TABLE 3—PROCEDURE FOR DETERMINING CONTROL AND APPLICABLE STANDARD FOR CONTINUOUS EMISSION STREAMS FROM NEW, MODIFIED, OR RECONSTRUCTED POLYPROPYLENE AND POLYETHYLENE AFFECTED FACILITIES

Procedure /a/	Applicable TOC weight percent range	Control/no control criteria	Applicable standard
1. Sum all uncontrolled streams with TOC weight percent within the applicable weight percent range from all affected facilities at a plant site.	0.10 < 5.5	1. If total combined uncontrolled emissions are equal to or greater than the calculated threshold emissions (CTE) /b/, control.	1. § 60.562–1(a)(1)(i) (A), (B), or (C).
2. Calculate total uncontrolled annual emissions for each weight percent range. For modified or affected facilities, use the total uncontrolled emissions after modification or reconstruction.		2. If total combined uncontrolled emission are less than the CTE /b/, control only individual streams with volume flow rates of 8 scfm or less.	2. § 60.562–1(a)(1)(i) (A) through (D).
3. Calculate composite TOC concentration (weight percent) for streams in the 0.10 to less than 5.5 weight percent range and for streams in the 5.5 to less than 20 weight percent range. For modified or reconstructed affected facilities, calculate the composite VOC concentration before and after modification and reconstruction.	5.5 < 20	1. If total combined uncontrolled emissions are equal to or greater than CTE /b/, control.	1. § 60.562–1(a)(1)(i) (A), (B), or (C) 2. If total combined uncontrolled emissions are less than the CTE/ b/, control only individual streams with volume flow rates of 8 scfm or less.
4. Select the higher of the two TOC concentrations for each weight percent range for vent streams from a modified or reconstructed affected facility.	20 to 100	1. If total combined uncontrolled emissions are equal to or greater than 18.2 Mg/yr, control.	1. § 60.562–1(a)(1)(i) (A), (B), or (C).
5. Calculate the threshold emissions for the 0.10 to less than 5.5 weight percent range and for the 5.5 to less than 20 weight percent range using the respective composite TOC concentration selected above.		2. If total combined uncontrolled emissions are less than 18.2 Mg/yr, control.	2. § 60.562–1(a)(1)(i) (A) through (D).

a Individual streams excluded under § 60.560(g) from the requirements of § 60.562–1 are to be excluded from all calculations in this table. This paragraph exempts all individual emission streams with individual uncontrolled annual emission rates of less than 1.6 Mg/yr and all individual emission streams with individual TOC concentrations of less than 0.10 percent TOC by weight.

b For the 0.10 to less than 5.5 weight percent range, the following equations are used:

If the percent composite TOC concentration is	Use this equation to calculate threshold emissions
0.10<0.12	$(a \times 7.5 \times 10^6)+226$
0.12<0.2	$(b \times 58.3)+116.8$
0.2<0.3	$(c \times 3020)+71.8$
0.3<0.4	$(d \times 547)+54.5$
0.4<0.6	48.3+31 (0.6 – weight percent TOC)
0.6<5.5	48.3

where: $a=(0.12-\text{weight percent TOC})^{2.5}$

$$b=\frac{\left\{\frac{0.18}{\text{weight percent TOC}}\right\}^{0.5}-1}{\text{weight percent TOC}}$$

$c=(0.3-\text{weight percent TOC})^2$

$d=(0.4-\text{weight percent TOC})^{1.5}$

For the 5.5 to less than 20 weight percent range, the following equations are used.

If the percent composite TOC concentration is	Use this equation to calculate threshold emissions
5.5<7.0	$(e \times 740)+31$
7.0<9.0	$(f \times 324)+25.0$
9.0<20	$(g \times 125)+18.2$

where

$$e = \frac{\left\{\frac{7.0}{\text{weight percent TOC}}\right\}^{0.5} - 1}{\text{weight percent TOC}}$$

$$f = \frac{\left\{\frac{9.0}{\text{weight percent TOC}}\right\}^{0.5} - 1}{\text{weight percent TOC}}$$

$$g = \frac{\left\{\frac{20.0}{\text{weight percent TOC}}\right\}^{0.5} - 1}{\text{weight percent TOC}}$$

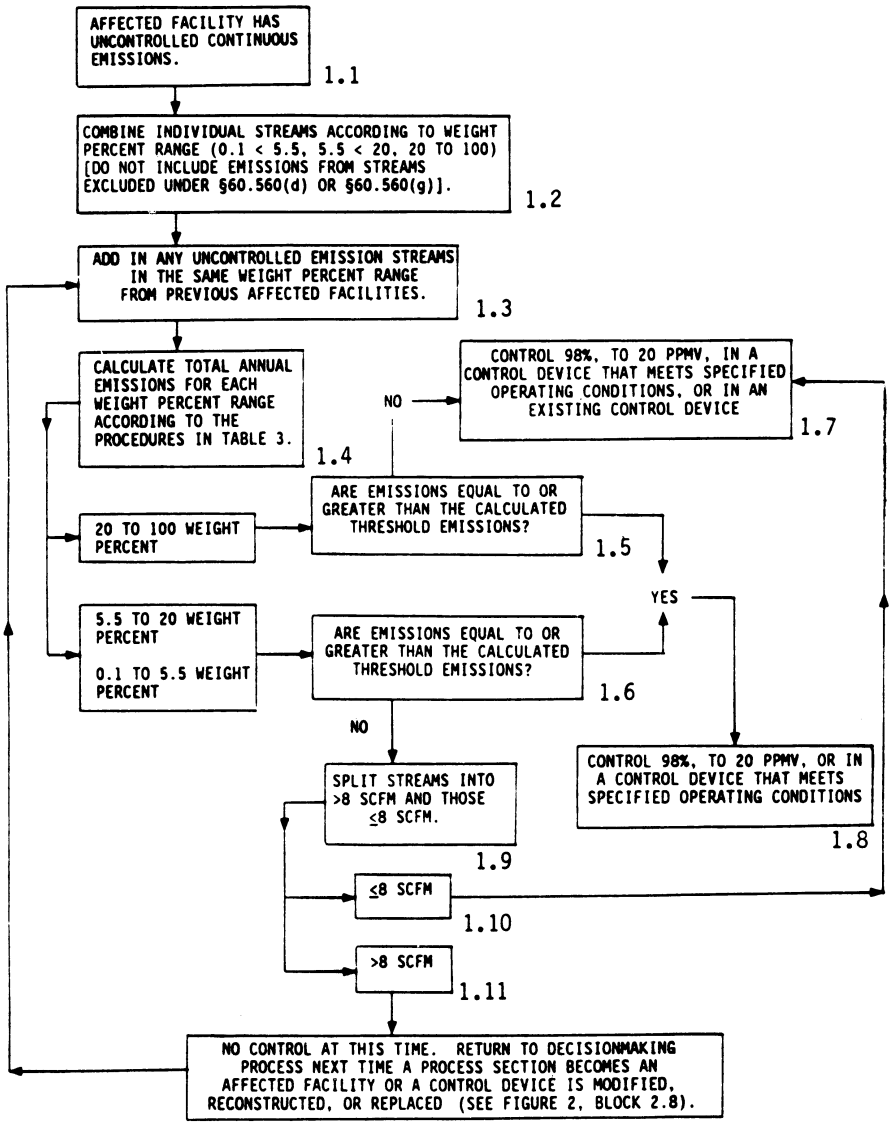
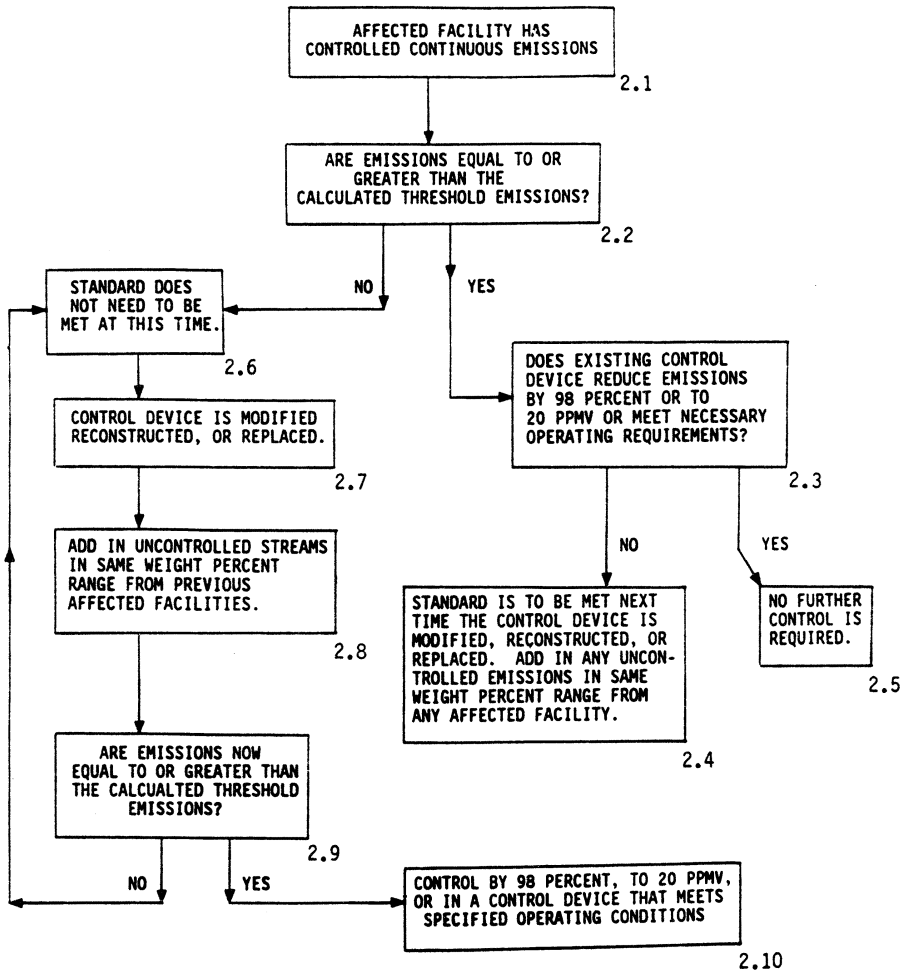


Figure 1. Decisionmaking Process for Uncontrolled Continuous Emissions from Polypropylene and Polyethylene Affected Facilities

(iii) Controlled Continuous Emissions. For each vent stream that emits continuous emissions from an affected facility as defined in §60.560(a)(1) and that is controlled in an existing control device, each owner or operator shall determine whether the emissions entering the control device are greater

than or equal to the calculated threshold emissions (CTE) level, which is to be calculated using the TOC concentration of the inlet vent stream and the equations in footnote b of table 3. If the inlet stream's TOC concentration is equal to or greater than 20 weight percent, the calculated threshold emissions level is 18.2 Mg/yr (20.1 ton/yr). If multiple emission streams are vented to the control device, the individual streams are not to be separated into individual weight percent ranges for calculation purposes as would be done for uncontrolled emission streams. Emissions vented to an existing control device are required to be controlled as described in paragraphs (a)(1)(iii) (A) and (B) of this section. Figure 2 illustrates the control determination procedure for controlled continuous emissions.



NOTE: There are no individual stream exemptions for emissions already controlled by existing control devices.

Figure 2. Decisionmaking Process for Continuous Emissions Already Controlled at Polypropylene and Polyethylene Affected Facilities

(A) If the annual emissions of the stream entering the control device are equal to or greater than the CTE levels, then compliance with one of the requirements identified in §60.562–1(a)(1)(i) (A), (B), or (C) is required at such time the control device is reconstructed or replaced or has its operating conditions modified as a result of State or local regulations (including changes in the operating permit) including those instances where the control device is reconstructed, replaced, or modified in its operation at the same time the existing process section

is modified or reconstructed and becomes an affected facility. If the existing control device already complies with one of the requirements identified in § 60.562–1(a)(1)(i) (A), (B), or (C), no further control is required.

(B) If the annual emissions of the stream entering the control device are less than the CTE level, then the requirements of § 60.562–1(a)(1)(i) (A), (B), or (C) are not applicable at that time. However, if the control device is replaced, reconstructed, or modified at a later date, each owner or operator shall reevaluate the applicability of these standards. This is done by combining with the vent stream entering the control device any uncontrolled vent streams in the same weight percent range as the controlled vent stream and determining whether the annual emissions of the stream entering the control device plus the applicable uncontrolled vent streams are greater than or equal to the CTE level, which is based on the weighted TOC concentration of the controlled vent stream and the uncontrolled vent streams. If the annual emissions entering the control device (including the applicable uncontrolled vent streams) are greater than or equal to the CTE level, then compliance with one of the requirements identified in § 60.562–1(a)(1)(i) (A), (B), or (C) is required at that time for both the controlled and uncontrolled vent streams. If the annual emissions are less than the CTE level, compliance with these standards is again not required at such time. However, if the control device is again replaced, reconstructed, or modified, each owner or operator shall repeat this determination procedure.

(2) *Intermittent emissions.* The owner or operator shall control each vent stream that emits intermittent emissions from an affected facility as defined in § 60.560–1(a)(1) by meeting one of the control requirements specified in paragraphs (a)(2) (i) and (ii) of this section. If a vent stream that emits intermittent emissions is controlled in an existing flare, incinerator, boiler, or process heater, the requirements of this paragraph are waived until such time the control device is reconstructed or replaced or is modified in its operating conditions as a result of State or local regulation, including changes in the operating permit. This paragraph does not apply to emergency vent streams exempted by § 60.560(h) and as defined in § 60.561.

(i) Combust the emissions in a flare that is:

(A) Designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours,

(B) Operated with a flame present at all times, and

(C) Designed to maintain a stable flame.

(ii) Combust the emissions in an incinerator, boiler, or process heater. Such emissions shall be introduced into the flame zone of a boiler or process heater.

(b) *Polystyrene.* Each owner or operator of a polystyrene process line containing process sections subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first. Each owner or operator of a polystyrene process line using a continuous process shall:

(1) Limit the continuous TOC emissions from the material recovery section by complying with one of the following:

(i) Not allow continuous TOC emissions to be greater than 0.0036 kg TOC/Mg (0.0072 lb TOC/ton) product; or

(ii) Not allow the outlet gas stream temperature from each final condenser in the material recovery section to exceed −25 °C (−13 °F). For purposes of this standard, temperature excursions above this limit shall not be considered a violation when such excursions occur during periods of startup, shutdown, or malfunction; or

(iii) Comply with § 60.562–1(a)(1)(i) (A), (B), or (C).

(2) If continuous TOC emissions from the material recovery section are routed through an existing emergency vapor recovery system, then compliance with these standards is required when the emergency vapor recovery

system undergoes modification, reconstruction, or replacement. In such instances, compliance with these standards shall be achieved no later than 180 days after completion of the modification, reconstruction, or replacement.

(c) *Poly(ethylene terephthalate).* Each owner or operator of a poly(ethylene terephthalate) process line containing process sections subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.

(1) Each owner or operator of a PET process line using a dimethyl terephthalate process shall:

(i) Limit the continuous TOC emissions from the material recovery section (i.e., methanol recovery) by complying with one of the following:

(A) Not allow the continuous TOC emissions to be greater than 0.018 kg TOC/Mg (0.036 lb TOC/ton) product; or

(B) Not allow the outlet gas stream temperature from each final condenser in the material recovery section (i.e., methanol recovery) to exceed +3 °C (+37 °F). For purposes of this standard, temperature excursions above this limit shall not be considered a violation when such excursions occur during periods of startup, shutdown, or malfunction.

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vacuum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below. The ethylene glycol concentration limits specified in paragraphs (c)(1)(ii) (B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg (0.04 lb TOC/ton) product; and

(B) If steam-jet ejectors are used as vacuum producers and a low viscosity product is being produced using single or multiple end finishers or a high viscosity product is being produced using a single end finisher, maintain the concentration of ethylene glycol in the liquid effluent exiting the vacuum system servicing the polymerization reaction section at or below 0.35 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days; or

(C) If steam-jet ejectors are used as vacuum producers and a high viscosity product is being produced using multiple end finishers, maintain an ethylene glycol concentration in the cooling tower at or below 6.0 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days.

(2) Each owner or operator of a PET process line using a terephthalic acid process shall:

(i) Not allow the continuous TOC emissions from the esterification vessels in the raw materials preparation section to be greater than 0.04 kg TOC/Mg (0.08 lb TOC/ton) product.

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vaccum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below. The ethylene glycol concentration limits specified in paragraphs (c)(2)(ii) (B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg (0.04 lb TOC/ton) product; and

(B) If steam-jet ejectors are used as vacuum producers and a low viscosity product is being produced using single or multiple end finishers or a high viscosity product is being produced using a single end finisher, maintain the concentration of ethylene glycol in the

liquid effluent exiting the vacuum system servicing the polymerization reaction section at or below 0.35 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days; or

(C) If steam-jet ejectors are used as vacuum producers and a high viscosity product is being produced using multiple end finishers, maintain an ethylene glycol concentration in the cooling tower at or below 6.0 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days.

(d) Closed vent systems and control devices used to comply with this subpart shall be operated at all times when emissions may be vented to them.

(e) 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 vent system that would lead the vent stream to the atmosphere, either directly or indirectly, bypassing the control device.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991; 65 FR 61767, Oct. 17, 2000]

§ 60.562–2 Standards: Equipment leaks of VOC.

(a) Each owner or operator of an affected facility subject to the provisions of this subpart shall comply with the requirements specified in § 60.482–1 through § 60.482–10 as soon as practicable, but no later than 180 days after initial startup, except that indications of liquids dripping from bleed ports in existing pumps in light liquid service are not considered to be a leak as defined in § 60.482–2(b)(2). For purposes of this standard, a ''bleed port'' is a technologically-required feature of the pump whereby polymer fluid used to provide lubrication and/or cooling of the pump shaft exits the pump, thereby resulting in a visible leak of fluid. This exemption expires when the existing pump is replaced or reconstructed.

(b) An owner or operator may elect to comply with the requirements specified in § 60.483–1 and § 60.483–2.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements specified in § 60.484.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions specified in § 60.485 except an owner or operator may use the following provision in addition to § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

(e) Each owner or operator subject to the provisions of this subpart shall comply with § 60.486 and § 60.487.

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991, as amended at 65 FR 61767, Oct. 17, 2000]

§ 60.563 Monitoring requirements.

(a) Whenever a particular item of monitoring equipment is specified in this section to be installed, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications that item as follows:

(1) A temperature monitoring device to measure and record continuously the operating temperature to within 1 percent (relative to degrees Celsius) or ±0.5 °C (±0.9 °F), whichever is greater.

(2) A flame monitoring device, such as a thermocouple, an ultraviolet sensor, an infrared beam sensor, or similar device to indicate and record continuously whether a flare or pilot light flame is present, as specified.

(3) A flow monitoring indicator to indicate and record whether or not flow exists at least once every fifteen minutes.

(4) An organic monitoring device (based on a detection principle such as infrared, photoionization, or thermal conductivity) to indicate and record continuously the concentration level of organic compounds.

(5) A specific gravity monitoring device to measure and record continuously to within 0.02 specific gravity unit.

(b) The owner or operator shall install, as applicable, the monitoring equipment for the control means used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), as follows:

(1) If the control equipment is an incinerator:

(i) For a noncatalytic incinerator, a temperature monitoring device shall be installed in the firebox.

(ii) For a catalytic incinerator, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalytic bed.

(2) If a flare is used:

(i) A flame monitoring device shall be installed to indicate the presence of a flare flame or a flame for each pilot light, if the flare is used to comply with § 60.562–1(a)(1), including those flares controlling both continuous and intermittent emissions.

(ii) A thermocouple or equivalent monitoring device to indicate the presence of a flame at each pilot light, if used to comply with § 60.562–1(a)(2).

(3) If a boiler or process heater is used:

(i) If the boiler or process heater has a heat input design capacity of less than 150 million Btu/hr, a temperature monitoring device shall be installed between the radiant section and the convection zone for watertube boilers and between the furnace (combustion zone) and the firetubes for firetube boilers.

(ii) If the boiler or process heater has a heat input design capacity of 150 million Btu/hr or greater, such records to indicate the periods of operation of the boiler or process heater shall be maintained. The records must be readily available for inspection.

(4) If an absorber is the final unit in a system:

(i) A temperature monitoring device and a specific gravity monitoring device for the scrubber liquid shall be installed, or

(ii) An organic monitoring device shall be installed at the outlet of the absorber.

(5) If a condenser is the final unit in a system:

(i) A temperature monitoring device shall be installed at the condenser exit (product side), or

(ii) An organic monitoring device shall be installed at the outlet of the condenser.

(6) If a carbon adsorber is the final unit in a system, an organic monitoring device shall be installed at the outlet of the carbon bed.

(c) Owners or operators of control devices used to comply with the provisions of this subpart, except § 60.562–1(a)(1)(i)(D), shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(d) 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 fifteen 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 open for valves that allow the stream to be vented directly or indirectly to the atmosphere).

(e) An owner or operator complying with the standards specified under § 60.562–1, except § 60.562–1(a)(1)(i)(D), with control devices other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber or by any other means shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991]

§ 60.564 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures specified in this section, except as provided under § 60.8(b). Owners or operators complying with § 60.562–1(a)(1)(i)(D) need not perform a performance test on the control device, provided the control device is not used to comply with any other requirement of § 60.562–1(a).

(1) Whenever changes are made in production capacity, feedstock type or catalyst type, or whenever there is replacement, removal, or addition of a control device, each owner or operator shall conduct a performance test according to the procedures in this section as appropriate, in order to determine compliance with § 60.562–1.

(2) Where a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater is used, the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in § 114 of the Act.

(3) The owner or operator shall determine the average organic concentration for each performance test run using the equipment described in § 60.563(a)(4). The average organic concentration shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program.

(4) When an absorber is the final unit in the system, the owner or operator shall determine the average specific gravity for each performance test run using specific gravity monitoring equipment described in § 60.563(a)(5). An average specific gravity shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program.

(5) When a condenser is the final unit in the system, the owner or operator shall determine the average outlet temperature for each performance test run using the temperature monitoring equipment described in § 60.563(a)(1). An average temperature shall be determined from measurements taken at least every 15 minutes during each performance test run while the vent stream is normally routed and constituted. The average of the three runs shall be the base value for the monitoring program.

(b) The owner or operator shall determine compliance with the emission concentration standard in § 60.562–1 (a)(1)(i)(A) or (b)(1)(iii) if applicable [if not, see paragraph (c) of this section] as follows:

(1) The TOC concentration is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, ppmv.

C_j = the concentration of sample component j, ppm.

n = Number of components in the sample.

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site at the outlet of the control device. Method 4 shall be used to determine the moisture content, if necessary.

(ii) The 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 15 minute intervals.

(2) If supplemental combustion air is used, the TOC concentration shall be corrected to 3 percent oxygen and shall be computed using the following equation:

$$C_{CORR} = C_{MEAS} \times \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

C_{CORR} = Concentration of TOC corrected to 3 percent oxygen, dry basis, ppm by volume.

C_{MEAS} = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume, as calculated in paragraph (b)(1) of this section.

$\%O_{2d}$ = Concentration of O_2, dry basis, percent by volume.

The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$). The sampling site shall be the same as that of the TOC sample and the samples shall be taken during the same time that the TOC samples are taken.

(c) If paragraph (b) of this section is not applicable, then the owner or operator shall determine compliance with the percent emission reduction standard in § 60.562–1 (a)(1)(i)(A) or (b)(1)(iii) as follows:

(1) The emission reduction of TOC (minus methane and ethane) shall be determined using the following equation:

$$P = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

where:

P = Percent emission reduction, by weight.

E_{inlet} = Mass rate of TOC entering the control device, kg TOC/hr (lb TOC/hr).

E_{outlet} = Mass rate of TOC, discharged to the atmosphere, kg TOC/hr (lb TOC/hr).

(2) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_1 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_1 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

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, ppmv.

M_{ij}, M_{oj} = Molecular weight of sample component ''j'' of the gas stream at the inlet and outlet of the control device respectively, g/g-mole (lb/lb-mole).

Q_i, Q_o = Flow rate of the gas stream at the inlet and outlet of the control device, respectively, dscm/hr (dscf/hr).

$K_1 = 4.157 \times 10^{-8}$ [(kg)/g-mole)]/[(g)(ppm)(dscm)] {5.711×10^{-15} [(lb)/(lb-mole)]/(lb)(ppm)(dscf)]}

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_{ij}, C_{oj}) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the inlet and outlet sampling sites. The inlet site shall be before the inlet of the control device and after all product recovery units.

(ii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the volumetric flow rates (Q_i, Q_o). If necessary, Method 4 shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

(iii) Inlet and outlet samples shall be taken simultaneously. The 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 15 minute intervals.

(d) An owner or operator shall determine compliance with the individual stream exemptions in § 60.560(g) and the procedures specified in table 3 for compliance with § 60.562–1(a)(1) as identified in paragraphs (d)(1) and (2) of this section. An owner or operator using the procedures specified in § 60.562–1(a)(1) for determining which continuous process emissions are to be controlled may use calculations demonstrated to be sufficiently accurate as to preclude the necessity of actual testing for purposes of calculating the uncontrolled annual emissions and weight percent of TOC. Owners or operators seeking to exempt streams under § 60.560(g) must use the appropriate test procedures specified in this section.

(1) The uncontrolled annual emissions of the individual vent stream shall be determined using the following equation:

$$E_{unc} = K_2 \left(\sum_{j=1}^{n} C_j M_j \right) Q \times 8{,}600$$

Where:

E_{unc} = uncontrolled annual emissions, Mg/yr (ton/yr)

C_j = concentration of sample component j of the gas stream, dry basis, ppmv

M_j = molecular weight of sample component j of the gas stream, g/g-mole (lb/lb-mole)
Q = flow rate of the gas stream, dscm/hr (dscf/hr)
K_2 = 4.157×10^{-11} [(Mg)(g-mole)]/[(g)(ppm)(dscm)] (metric units)
= 1.298×10^{-12} [(ton)(lb-mole)]/[(lb)(ppm)(dscf)] (English units)
8,600 = operating hours per year

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site. If the gas stream is controlled in an existing control device, the sampling site shall be before the inlet of the control device and after all product recovery units.

(ii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the volumetric flow rate (Q). If necessary, Method 4 shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

(iii) The 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 15 minute intervals.

(2) The weight percent VOC of the uncontrolled individual vent stream shall be determined using the following equation:

$$\text{weight \% TOC} = \frac{\sum_{j=1}^{n} C_j M_j}{MW_{gas} \times 10^6} \times 100$$

where:

C_j=concentration of sample TOC component ''j'' of the gas stream, dry basis, ppmv.
M_j=Molecular weight of sample TOC component ''j'' of the gas stream, g/g-mole (1b/1b-mole).
MW_{gas}=Average molecular weight of the entire gas stream, g/g-mole (1b/1b-mole).

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site. If the gas stream is controlled in an existing control device, the sampling site shall be before the inlet of the control device and after all product recovery units. If necessary, Method 4 shall be used to determine the moisture content. This determination shall be compatible with the Method 18 determinations.

(ii) The average molecular weight of the gas stream shall be determined using methods approved by the Administrator. If the carrier component of the gas stream is nitrogen, then an average molecular weight of 28 g/g-mole (lb/lb-mole) may be used in lieu of testing. If the carrier component of the gas stream is air, then an average molecular weight of 29 g/g-mole (lb/lb-mole) may be used in lieu of testing.

(iii) The 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 15 minute intervals.

(e) The owner or operator shall determine compliance of flares with the visible emission and flare provisions in § 60.562–1 as follows:

(1) Method 22 shall be used to determine visible emissions. The observation period for each run shall be 2 hours.

(2) The monitoring device of § 60.563(b)(2) shall be used to determine whether a flame is present.

(f) The owner or operator shall determine compliance with the net heating value provisions in § 60.18 as referenced by § 60.562–1(a)(1)(i)(C). The net heating value of the process vent stream being combusted in a flare shall be computed as follows:

$$H_T = K_3 \left(\sum_{j=1}^{n} C_j J_j \right)$$

Where:

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).
K_3 = 1.74×10^{-7} (1/ppm)(g-mole/scm)(MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.
= 4.67×10^{-6} (1/ppm)(lb-mole/scf)(Btu/kcal) (English units) where standard temperature for (lb/mole/scf) is 68 °F.
C_j = Concentration on a wet basis of compound j in ppm.

H_j = Net heat of combustion of compound j, kcal/(g-mole) (kcal/(lb-mole)), based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

(1) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site to the inlet of the flare. Using this same sample, ASTM D1946–77 or 90 (Reapproved 1994) (incorporated by reference—see § 60.17) shall be used to determine the hydrogen and carbon monoxide content.

(2) The 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 15 minute intervals.

(3) Published or calculated values shall be used for the net heats of combustion of the sample components. If values are not published or cannot be calculated, ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see § 60.17) may be used to determine the net heat of combustion of component ''j.''

(g) The owner or operator shall determine compliance with the exit velocity provisions in § 60.18 as referenced by § 60.562–1(a)(1)(i)(C) as follows:

(1) If applicable, the net heating value (H_T) of the process vent shall be determined according to the procedures in paragraph (f) of this section to determine the applicable velocity requirements.

(2) If applicable, the maximum permitted velocity (V_{max}) for steam-assisted and nonassisted flares shall be computed using the following equation:

$$\mathrm{Log}_{10}(V_{max}) = (H_T + K_4)/K_5$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

K_4 = 28.8 (metric units), 1212 (English units)

K_5 = 31.7 (metric units), 850.8 (English units)

H_T = The net heating value as determined in paragraph (f) of this section, MJ/scm (Btu/scf).

(3) The maximum permitted velocity, $V_{max,}$ for air-assisted flares shall be determined by the following equation:

$$V_{max} = K_6 + K_7 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec).

K_6 = 8.706 m/sec (metric units)
= 28.56 ft/sec (English units)

K_7 = 0.7084 [(m/sec)/MJ/scm)] (metric units)
= 0.00245 [(ft/sec)/Btu/scf)] (English units)

H_T = The net heating value as determined in paragraph (f) of this section, MJ/scm (Btu/scf).

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Method 2, 2A, 2C, or 2D as appropriate, by the unobstructed (free) cross sectional area of the flare tip.

(h) The owner or operator shall determine compliance with the mass emission per mass product standards in §§ 60.560(d) and (e) and in §§ 60.562–1(b)(1)(i), (c)(1)(i)(A), (c)(1)(ii)(A), (c)(2)(i), and (c)(2)(ii)(A).

(1) The emission rate of TOC shall be computed using the following equation:

$$ER_{TOC} = K_5 \frac{E_{TOC}}{P_p}$$

Where:

ER_{TOC} = Emission rate of total organic compounds (minus methane and ethane), kg TOC/Mg (lb TOC/ton) product

E_{TOC} = Emission rate of total organic compounds (minus methane and ethane) in the sample, kg/hr (lb/hr)

P_p = The rate of polymer production, kg/hr (lb/hr)

K_5 = 1,000 kg/Mg (metric units)
= 2,000 lb/ton (English units)

(2) The mass rate of TOC, E_{TOC}, shall be determined according to the procedures, as appropriate, in paragraph (c)(2) of this section. The sampling site for determining compliance with §§ 60.560 (d) and (e) shall be before any add-on control devices and after all product recovery devices. Otherwise, the sampling site shall be at the outlet of the control device.

(3) The rate of polymer production, P_p, shall be determined by dividing the weight of polymer pulled (in kg (lb)) from the process line during the performance test by the number of hours taken to perform the performance test. The weight of polymer pulled shall be determined by direct measurement or,

subject to prior approval by the Administrator, computed from materials balance by good engineering practice.

(i) The owner or operator shall determine continuous compliance with the temperature requirements in §§ 60.562–1(b)(1)(ii) and 60.562–1(c)(1)(i)(B) by using the temperature monitoring equipment described in § 60.563(a)(1). An average temperature shall be determined from measurements taken at least every 15 minutes every three hours while the vent stream is normally routed and constituted. Each three-hour period constitutes a performance test.

(j) For purposes of determining compliance with § 60.562–1(c) (1)(ii)(B), (1)(ii)(C), (2)(ii)(B), or (2)(ii)(C), the ethylene glycol concentration in either the cooling tower or the liquid effluent from steam-jet ejectors used to produce a vacuum in the polymerization reactors, whichever is applicable, shall be determined:

(1) Using procedures that conform to the methods described in ASTM D2908–74 or 91, ''Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography'' (incorporated by reference—see § 60.17), except as provided in paragraph (j)(2) of this section:

(i) At least one sample per operating day shall be collected using the grab sampling procedures of ASTM D3370–76 or 96a, ''Standard Practices for Sampling Water'' (incorporated by reference—see § 60.17). An average ethylene glycol concentration by weight shall be calculated on a daily basis over a rolling 14-day period of operating days, except as provided in paragraphs (j)(1) (ii) and (iii) of this section. Each daily average ethylene glycol concentration so calculated constitutes a performance test. Exceedance of the standard during the reduced testing program specified in paragraphs (j)(1) (ii) and (iii) of this section is a violation of these standards.

(ii) For those determining compliance with § 60.562–1(c) (1)(ii)(B) or (2)(ii)(B), the owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 0.10 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced testing period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 0.10 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. A reduced sampling program can be reinstituted if the requirements specified in this paragraph are met.

(iii) For those determining compliance with § 60.562–1(c)(1)(ii)(C) or (c)(2)(ii)(C), the owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 1.8 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced test period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 1.8 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. A reduced program can be reinstituted if the requirements specified in this paragraph are met.

(iv) The upper 95 percent confidence interval shall be calculated using the equation:

$$CI_{95} = \frac{\sum_{i=1}^{n} X_i}{n} + 2\sqrt{\frac{n\sum_{i=1}^{n} X_i^2 - \left(\sum_{i=1}^{n} X_i\right)^2}{n(n-1)}}$$

Where:

X_i = daily ethylene glycol concentration for each day used to calculate the 14-day rolling average used in test results to justify implementing the reduced testing program.

n = number of ethylene glycol concentrations.

(2) Measuring an alternative parameter, such as carbon oxygen demand or biological oxygen demand, that is demonstrated to be directly proportional to

the ethylene glycol concentration. Such parameter shall be measured during the initial 14-day performance test during which the facility is shown to be in compliance with the ethylene glycol concentration standard whereby the ethylene glycol concentration is determined using the procedures described in paragraph (j)(1) of this section. The alternative parameter shall be measured on a daily basis and the average value of the alternative parameter shall be calculated on a daily basis over a rolling 14-day period of operating days. Each daily average value of the alternative parameter constitutes a performance test.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991; 64 FR 11541, Mar. 9, 1999; 65 FR 61767, Oct. 17, 2000]

§ 60.565 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily-accessible record of the following information measured during each performance test, and shall include the following information in the report of the initial performance test in addition to the written results of such performance tests as required under § 60.8. Where a control device is used to comply with § 60.562–1(a)(1)(i)(D) only, a report containing performance test data need not be submitted, but a report containing the information in § 60.565(a)(11) is required. Where a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater is used to comply with § 60.562–1(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.565(a)(2)(i) is required. The same information specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device or the outlet concentration of TOC (minus methane and ethane) is determined.

(1) When an incinerator is used to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2):

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed), measured at least every 15 minutes and averaged over the performance test period, and

(ii) The percent reduction of TOC (minus methane and ethane) achieved by the incinerator, the concentration of TOC (minus methane and ethane) (ppmv, by compound) at the outlet of the control device on a dry basis, or the emission rate in terms of kg TOC (minus methane and ethane) per Mg (lb TOC/ton) of product at the outlet of the control device, whichever is appropriate. If supplemental combustion air is used, the TOC concentration corrected to 3 percent oxygen shall be recorded and reported.

(2) When a boiler or process heater is used to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2):

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) For boilers or process heaters with a design heat input capacity of less than 150 million Btu/hr, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance was determined.

(3) When a flare is used to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2):

(i) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test,

(ii) Continuous records of the pilot flame heat-sensing monitoring, and

(iii) Records of all periods of operations during which the pilot flame is absent.

(4) When an incinerator, boiler, or process heater is used to demonstrate compliance with § 60.562–1(a)(2), a description of the location at which the vent stream is introduced into the incinerator, boiler, or process heater.

(5) When a flare is used to demonstrate compliance with § 60.562–1(a)(2):

(i) All visible emission readings made during the performance test,

(ii) Continuous records of the pilot flame heat-sensing monitoring, and

(iii) Records of all periods of operation during which the pilot flame is absent.

(6) When an absorber is the final unit in a system to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2), the specific gravity (or alternative parameter that is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average temperature, measured at least every 15 minutes and averaged over the performance test period, of the absorbing liquid (both measured while the vent stream is normally routed and constituted).

(7) When a condenser is the final unit in a system to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2), the average exit (product side) temperature, measured at least every 15 minutes and averaged over the performance test period while the vent stream is normally routed and constituted.

(8) Daily measurement and daily average 14–day rolling average of the ethylene glycol concentration in the liquid effluent exiting the vacuum system servicing the polymerization reaction section, if an owner or operator is subject to § 60.562–1(c) (1)(ii)(B) or (2)(ii)(B), or of the ethylene glycol concentration in the cooling water in the cooling tower, if subject to § 60.562–1(c) (2)(ii)(C) or (2)(iii)(C).

(9) When a carbon adsorber is the final unit in a system to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2): the concentration level or reading indicated by the organics monitoring device at the outlet of the adsorber, measured at least every 15 minutes and averaged over the performance test period while the vent stream is normally routed and constituted.

(10) When an owner or operator seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in §§ 60.560 (d) and (e) or with the individual stream exemptions in § 60.560(g), each process operation variable (e.g., pressure, temperature, type of catalyst) that may result in an increase in the uncontrolled emission rate, if § 60.560(d) or (e) is applicable, or in an increase in the uncontrolled annual emissions or the VOC weight percent, as appropriate, if § 60.560(g) is applicable, should such operating variable be changed.

(11) When an owner or operator uses a control device to comply with § 60.562–1(a)(1)(i)(D) alone: all periods when the control device is not operating.

(b)(1) Each owner or operator subject to the provisions of this subpart shall submit with the initial performance test or, if complying with § 60.562–1(a)(1)(i)(D), as a separate report, 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.

(2) 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 two years up-to-date, readily accessible continuous records of:

(i) All periods when flow is indicated if flow indicators are installed under § 69.563(d)(1).

(ii) 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).

(c) Where an incinerator is used to comply with § 60.562–1, except §§ 60.562(a)(1)(i)(D) and (a)(2), 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) The temperature measurements specified under § 60.563(b)(1).

(2) Records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as follows:

(i) For noncatalytic incinerators, all 3–hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance was demonstrated.

(ii) For catalytic incinerators, all 3-hour periods of operation during which 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 at which compliance was demonstrated. The owner or operator also shall record all 3-hour periods of operation during which 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 at which compliance was demonstrated.

(d) Where a boiler or process heater is used to comply with § 60.562–1, except §§ 60.562–1 (a)(1)(i)(D) and (a)(2), 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) Where a boiler or process heater with a heat input design capacity of 150 million Btu/hr or greater is used, all periods of operation of the boiler 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), and

(2) Where a boiler or process heater with a heat input design capacity of less than 150 million Btu/hr is used, all periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance was demonstrated.

(e) Where a flare is used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), 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) The flare or pilot light flame heat sensing monitoring specified under § 60.563(b)(2), and

(2) All periods of operation in which the flare or pilot flame, as appropriate, is absent.

(f) Where an adsorber, condenser, absorber, or a control device other than a flare, incinerator, boiler, or process heater is used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), 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 the periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Where an owner or operator seeks to comply with § 60.562–1, periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final unit in a system:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test at which compliance was demonstrated, and

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test at which compliance was demonstrated (unless monitoring of an alternative parameter that is a measure of the degree of absorbing liquid saturation is approved by the Administrator, in which case he or she will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final unit in a system, all 3-hour periods of operation during which the average condenser operating temperature was

more than 6 °C (10 °F) above the average operating temperature during the most recent performance test at which compliance was demonstrated.

(3) Where a carbon adsorber is the final unit in a system, all 3-hour periods of operation during which the average organic concentration level in the carbon adsorber gases is more than 20 percent greater than the exhaust gas concentration level or reading measured by the organics monitoring system during the most recent performance test at which compliance was demonstrated.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.560(j) or § 60.562–1 shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of product recovery equipment; and

(2) The results of any performance test performed pursuant to the procedures specified by § 60.564.

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in §§ 60.560 (d) and (e) or with the individual stream exemptions in § 60.560(g) shall keep for at least 2 years up-to-date, readily accessible records of any change in process operation that increases the uncontrolled emission rate of the process line in which the affected facility is located, if § 60.560 (d) or (e) is applicable, or that increases the uncontrolled annual emissions or the VOC weight percent of the individual stream, if § 60.560(g) is applicable.

(i) Each owner and operator subject to the provisions of this subpart is exempt from § 60.7(c) of the General Provisions.

(j) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.562–1 other than as provided under § 60.565 (a) through (e).

(k) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision of §§ 60.560 (d) and (e), the individual stream exemptions of § 60.560(g), or the requirements of § 60.562–1 shall submit to the Administrator semiannual reports of the following recorded information, as applicable. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §§ 60.565 (c), (d)(2), and (f).

(2) All periods recorded under § 60.565(b) when the vent stream has been diverted from the control device.

(3) All periods recorded under § 60.565(d) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.565(e) in which the flare or pilot flame was absent.

(5) All periods recorded under § 60.565(a)(8) when the 14-day rolling average exceeded the standard specified in § 60.562–1(c) (1)(ii)(B), (1)(ii)(C), (2)(ii)(B), or (2)(ii)(C), as applicable.

(6) Any change in process operations that increases the uncontrolled emission rate of the process line in which the affected facility is located, as recorded in § 60.565(h).

(7) Any change in process operations that increases the uncontrolled annual emissions or the VOC weight percent of the individual stream, as recorded in § 60.565(h).

(l) Each owner or operator subject to the provisions of this subpart shall notify the Administrator of the specific provisions of § 60.562, § 60.560(d), or § 60.560(e), as applicable, with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.562 with which he or she will comply or becomes subject to § 60.562 for the first time (i.e., the owner or operator can no longer meet the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in § 60.560 (d) or (e)), then the

owner or operator shall notify the Administrator 90 days before implementing a change and, upon implementing a change, a performance test shall be performed as specified in § 60.564.

(m) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves alternative reporting requirements or means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991; 65 FR 61768, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.566 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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) Authority which will not be delegated to States: § 60.562–2(c).

Subpart EEE [Reserved]

Subpart FFF—Standards of Performance for Flexible Vinyl and Urethane Coating and Printing

SOURCE: 49 FR 26892, June 29, 1984, unless otherwise noted.

§ 60.580 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each rotogravure printing line used to print or coat flexible vinyl or urethane products.

(b) This subpart applies to any affected facility which begins construction, modification, or reconstruction after January 18, 1983.

(c) For facilities controlled by a solvent recovery emission control device, the provisions of § 60.584(a) requiring monitoring of operations will not apply until EPA has promulgated performance specifications under appendix B for the continuous monitoring system. After the promulgation of performance specifications, these provisions will apply to each affected facility under paragraph (b) of this section. Facilities controlled by a solvent recovery emission control device that become subject to the standard prior to promulgation of performance specifications must conduct performance tests in accordance with § 60.13(b) after performance specifications are promulgated.

§ 60.581 Definitions and symbols.

(a) All terms used in this subpart, not defined below, are given the same meaning as in the Act or in subpart A of this part.

Emission control device means any solvent recovery or solvent destruction device used to control volatile organic compounds (VOC) emissions from flexible vinyl and urethane rotogravure printing lines.

Emission control system means the combination of an emission control device and a vapor capture system for the purpose of reducing VOC emissions from flexible vinyl and urethane rotogravure printing lines.

Flexible vinyl and urethane products mean those products, except for resilient floor coverings (1977 Standard Industry Code 3996) and flexible packaging, that are more than 50 micrometers (0.002 inches) thick, and that consist of or contain a vinyl or urethane sheet or a vinyl or urethane coated web.

Gravure cylinder means a plated cylinder with a printing image consisting of minute cells or indentations, specifically engraved or etched into the cylinder's surface to hold ink when continuously revolved through a fountain of ink.

Ink means any mixture of ink, coating solids, organic solvents including dilution solvent, and water that is applied to the web of flexible vinyl or urethane on a rotogravure printing line.

Ink solids means the solids content of an ink as determined by Method 24, ink

manufacturer's formulation data, or plant blending records.

Inventory system means a method of physically accounting for the quantity of ink, solvent, and solids used at one or more affected facilities during a time period. The system is based on plant purchase or inventory records.

Plant blending records means those records which document the weight fraction of organic solvents and solids used in the formulation or preparation of inks at the vinyl or urethane printing plant where they are used.

Rotogravure print station means any device designed to print or coat inks on one side of a continuous web or substrate using the intaglio printing process with a gravure cylinder.

Rotogravure printing line means any number of rotogravure print stations and associated dryers capable of printing or coating simultaneously on the same continuous vinyl or urethane web or substrate, which is fed from a continuous roll.

Vapor capture system means any device or combination of devices designed to contain, collect, and route organic solvent vapors emitted from the flexible vinyl or urethane rotogravure printing line.

(b) All symbols used in this subpart not defined below are given the same meaning as in the Act or in subpart A of this part.

a=the gas stream vents exiting the emission control device.

bthe gas stream vents entering the emission control device.

fthe gas stream vents which are not directed to an emission control device.

C_{aj}=the concentration of VOC in each gas stream (j) for the time period exiting the emission control device, in parts per million by volume.

C_{bi}=the concentration of VOC in each gas stream (i) for the time period entering the emission control device, in parts per million by volume.

C_{fk}=the concentration of VOC in each gas stream (k) for the time period which is not directed to an emission control device, in parts per million by volume.

Gthe weighted average mass of VOC per mass of ink solids applied, in kilograms per kilogram.

M_{ci}=the total mass of each ink (i) applied in the time period as determined from plant records, in kilograms.

M_{dj}=the total mass of each dilution solvent (j) added at the print line in the time period determined from plant records, in kilograms.

Q_{aj}=the volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in standard cubic meters per hour.

Q_{bi}=the volumetric flow rate of each effluent gas stream (i) entering the emission control device, in standard cubic meters per hour.

Q_{fk}=the volumetric flow rate of each effluent gas stream (k) not directed to an emission control device, in standard cubic meters per hour.

Ethe VOC emission reduction efficiency (as a fraction) of the emission control device during performance testing.

Fthe VOC emission capture efficiency (as a fraction) of the vapor capture system during performance testing.

W_{oi}=the weight fraction of VOC in each ink (i) used in the time period as determined from Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram.

W_{si}''means the weight fraction of solids in each ink (i) used in the time period as determined from Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram.

W_{oj}=the weight fraction of VOC in each dilution solvent (j) added at the print line in the time period determined from Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram.

[49 FR 26892, June 29, 1984; 49 FR 32848, Aug. 17, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.582 Standard for volatile organic compounds.

(a) On and after the date on which the performance test required by § 60.8 has been completed, each owner or operator subject to this subpart shall either:

(1) Use inks with a weighted average VOC content less than 1.0 kilogram VOC per kilogram ink solids at each affected facility, or

(2) Reduce VOC emissions to the atmosphere by 85 percent from each affected facility.

(b) [Reserved]

§ 60.583 Test methods and procedures.

(a) Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.582(a) as follows:

(1) Method 24 for analysis of inks. If nonphotochemically reactive solvents

are used in the inks, standard gas chromatographic techniques may be used to identify and quantify these solvents. The results of Method 24 may be adjusted to subtract these solvents from the measured VOC content.

(2) Method 25A for VOC concentration (the calibration gas shall be propane);

(3) Method 1 for sample and velocity traverses;

(4) Method 2 for velocity and volumetric flow rates;

(5) Method 3 for gas analysis;

(6) Method 4 for stack gas moisture.

(b) To demonstrate compliance with § 60.582(a)(1), the owner or operator of an affected facility shall determine the weighted average VOC content of the inks according to the following procedures:

(1) Determine and record the VOC content and amount of each ink used at the print head, including the VOC content and amount of diluent solvent, for any time periods when VOC emission control equipment is not used.

(2) Compute the weighted average VOC content by the following equation:

$$G = \frac{\sum_{i=1}^{n} (W_{oi} M_{ci}) + \sum_{j=1}^{m} (W_{oj} M_{dj})}{\sum_{i=1}^{n} (M_{ci} W_{si})}$$

(3) The weighted average VOC content of the inks shall be calculated over a period that does not exceed one calendar month, or four consecutive weeks. A facility that uses an accounting system based on quarters consisting of two 28 calendar day periods and one 35 calendar day period may use an averaging period of 35 calendar days four times per year, provided the use of such an accounting system is documented in the initial performance test.

(4) Each determination of the weighted average VOC content shall constitute a performance test for any period when VOC emission control equipment is not used. Results of the initial performance test must be reported to the Administrator. Method 24 or ink manufacturers' formulation data along with plant blending records (if plant blending is done) may be used to determine VOC content. The Administrator may require the use of Method 24 if there is a question concerning the accuracy of the ink manufacturer's data or plant blending records.

(5) If, during the time periods when emission control equipment is not used, all inks used contain less than 1.0 kilogram VOC per kilogram ink solids, the owner or operator is not required to calculate the weighted average VOC content, but must verify and record the VOC content of each ink (including any added dilution solvent) used as determined by Method 24, ink manufacturers' formulation data, or plant blending records.

(c) To demonstrate compliance with § 60.582(a)(1), the owner or operator may determine the weighted average VOC content using an inventory system.

(1) The inventory system shall accurately account to the nearest kilogram for the VOC content of all inks and dilution solvent used, recycled, and discarded for each affected facility during the averaging period. Separate records must be kept for each affected facility.

(2) To determine VOC content of inks and dilution solvent used or recycled, Method 24 or ink manufacturers' formulation data must be used in combination with plant blending records (if plant blending is done) or inventory records or purchase records for new inks or dilution solvent.

(3) For inks to be discarded, only Method 24 shall be used to determine the VOC content. Inks to be discarded may be combined prior to measurement of volume or weight and testing by Method 24.

(4) The Administrator may require the use of Method 24 if there is a question concerning the accuracy of the ink manufacturer's data or plant records.

(5) The Administrator shall approve the inventory system of accounting for VOC content prior to the initial performance test.

(d) To demonstrate compliance with § 60.582(a)(2), the owner or operator of an affected facility controlled by a solvent recovery emission control device or an incineration control device shall conduct a performance test to determine overall VOC emission control efficiency according to the following procedures:

(1) The performance test shall consist of three runs. Each test run must last a minimum of 30 minutes and shall continue until the printing operation is interrupted or until 180 minutes of continuous operation occurs. During each test run, the print line shall be printing continuously and operating normally. The VOC emission reduction efficiency achieved for each test run is averaged over the entire test run period.

(2) VOC concentration values at each site shall be measured simultaneously.

(3) The volumetric flow rate shall be determined from one Method 2 measurement for each test run conducted immediately prior to, during, or after that test run. Volumetric flow rates at each site do not need to be measured simultaneously.

(4) In order to determine capture efficiency from an affected facility, all fugitive VOC emissions from the affected facility shall be captured and vented through stacks suitable for measurement. During a performance test, the owner or operator of an affected facility located in an area with other sources of VOC shall isolate the affected facility from other sources of VOC. These two requirements shall be accomplished using one of the following methods:

(i) Build a permanent enclosure around the affected facility;

(ii) Build a temporary enclosure around the affected facility and duplicate, to an extent that is reasonably feasible, the ventilation conditions that are in effect when the affected facility is not enclosed (one way to do this is to divide the room exhaust rate by the volume of the room and then duplicate that quotient or 20 air changes per hour, whichever is smaller, in the temporary enclosure); or

(iii) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected facility through any building ventilation system and other room exhausts such as print line ovens and embossers.

(5) For each affected facility, compliance with § 60.582(a)(2) has been demonstrated if the average value of the overall control efficiency (EF) for the three runs is equal to or greater than 85 percent. An overall control efficiency is calculated for each run as follows:

(i) For efficiency of the emission control device,

$$E = \frac{\sum_{i=1}^{n}(Q_{bi}C_{bi}) - \sum_{j=1}^{m}(Q_{aj}C_{aj})}{\sum_{i=1}^{n}(Q_{bi}C_{bi})}$$

(ii) For efficiency of the vapor capture system,

$$F = \frac{\sum_{i=1}^{n}(Q_{bi}C_{bi})}{\sum_{i=1}^{n}(Q_{bi}C_{bi}) + \sum_{k=1}^{p}(Q_{fk}C_{fk})}$$

[49 FR 26892, June 29, 1984; 49 FR 32848, Aug. 17, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.584 Monitoring of operations and recordkeeping requirements.

(a) The owner or operator of an affected facility controlled by a solvent recovery emission control device shall install, calibrate, operate, and maintain a monitoring system which continuously measures and records the VOC concentration of the exhaust vent stream from the control device and shall comply with the following requirements:

(1) The continuous monitoring system shall be installed in a location that is representative of the VOC concentration in the exhaust vent, at least two equivalent stack diameters from

the exhaust point, and protected from interferences due to wind, weather, or other processes.

(2) During the performance test, the owner or operator shall determine and record the average exhaust vent VOC concentration in parts per million by volume. After the performance test, the owner or operator shall determine and, in addition to the record made by the continuous monitoring device, record the average exhaust vent VOC concentration for each 3-hour clock period of printing operation when the average concentration is greater than 50 ppm and more than 20 percent greater than the average concentration value demonstrated during the most recent performance test.

(b) The owner or operator of an affected facility controlled by a thermal incineration emission control device shall install, calibrate, operate, and maintain a monitoring device that continuously measures and records the temperature of the control device exhaust gases and shall comply with the following requirements:

(1) The continuous monitoring device shall be calibrated annually and have an accuracy of ±0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(2) During the performance test, the owner or operator shall determine and record the average temperature of the control device exhaust gases. After the performance test, the owner or operator shall determine and record, in addition to the record made by the continuous monitoring device, the average temperature for each 3-hour clock period of printing operation when the average temperature of the exhaust gases is more than 28 °C (50 °F) below the average temperature demonstrated during the most recent performance test.

(c) The owner or operator of an affected facility controlled by a catalytic incineration emission control device shall install, calibrate, operate, and maintain monitoring devices that continuously measure and record the gas temperatures both upstream and downstream of the catalyst bed and shall comply with the following requirements:

(1) Each continuous monitoring device shall be calibrated annually and have an accuracy of ±0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(2) During the performance test, the owner or operator shall determine and record the average gas temperature both upstream and downstream of the catalyst bed. After the performance test, the owner or operator shall determine and record, in addition to the record made by the continuous monitoring device, the average temperatures for each 3-hour clock period of printing operation when the average temperature of the gas stream before the catalyst bed is more than 28 °C below the average temperature demonstrated 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 of the device during the most recent performance test.

(d) The owner or operator of an affected facility shall record time periods of operation when an emission control device is not in use.

[49 FR 26892, June 29, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.585 Reporting requirements.

(a) For all affected facilities subject to compliance with § 60.582, the performance test data and results from the performance test shall be submitted to the Administrator as specified in § 60.8(a).

(b) The owner or operator of each affected facility shall submit semiannual reports to the Administrator of occurrences of the following:

(1) Exceedances of the weighted average VOC content specified in § 60.582(a)(1);

(2) Exceedances of the average value of the exhaust vent VOC concentration as defined under § 60.584(a)(2);

(3) Drops in the incinerator temperature as defined under § 60.584(b)(2); and

(4) Drops in the average temperature of the gas stream immediately before the catalyst bed or drops in the average temperature across the catalyst bed as defined under § 60.584(c)(2).

(c) The reports required under paragraph (b) shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

(d) The requirements of this subsection remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with requirements established by the State.

Subpart GGG—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006

SOURCE: 49 FR 22606, May 30, 1984, unless otherwise noted.

§ 60.590 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in petroleum refineries.

(2) A compressor is an affected facility.

(3) The group of all the equipment (defined in § 60.591) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 4, 1983, and on or before November 7, 2006, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in § 60.591) for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities subject to subpart VV, subpart VVa, or subpart KKK of this part are excluded from this subpart.

(e) *Stay of standards*. Owners or operators are not required to comply with the definition of ''process unit'' in § 60.590 of this subpart until the EPA takes final action to require compliance and publishes a document in the FEDERAL REGISTER. While the definition of ''process unit'' is stayed, owners or operators should use the following definition:

Process unit means components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

[49 FR 22606, May 30, 1984, as amended at 72 FR 64895, Nov. 16, 2007; 73 FR 31376, June 2, 2008]

§ 60.591 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 60, or in subpart VV of part 60, and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square mile area extending from the Brooks Range to the Arctic Ocean.

Asphalt (also known as Bitumen) is a black or dark brown solid or semi-solid thermo-plastic material possessing waterproofing and adhesive properties. It is a complex combination of higher molecular weight organic compounds containing a relatively high proportion of hydrocarbons having carbon numbers greater than C25 with a high carbon to hydrogen ratio. It is essentially nonvolatile at ambient temperatures with closed cup flash point of 445 °F (230 °C) or greater.

Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.

In hydrogen service means that a compressor contains a process fluid that meets the conditions specified in § 60.593(b).

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.593(c).

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

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.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in § 60.482–1(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

[49 FR 22606, May 30, 1984, as amended at 72 FR 64895, Nov. 16, 2007]

EFFECTIVE DATE NOTE: At 73 FR 31376, June 2, 2008, § 60.591, the definition of ''process unit'' was stayed until further notice.

§ 60.592 Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.482–1 to 60.482–10 as soon as practicable, but no later than 180 days after initial startup.

(b) For a given process unit, an owner or operator may elect to comply with the requirements of paragraphs (b)(1), (2), or (3) of this section as an alternative to the requirements in § 60.482–7.

(1) Comply with § 60.483–1.

(2) Comply with § 60.483–2.

(3) Comply with the Phase III provisions in 40 CFR 63.168, except an owner or operator may elect to follow the provisions in § 60.482–7(f) instead of 40 CFR 63.168 for any valve that is designated as being leakless.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of § 60.484.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.485 except as provided in § 60.593.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486 and 60.487.

[49 FR 22606, May 30, 1984, as amended at 72 FR 64896, Nov. 16, 2007]

§ 60.593 Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VV.

(b)(1) Compressors in hydrogen service are exempt from the requirements of § 60.592 if an owner or operator demonstrates that a compressor is in hydrogen service.

(2) 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. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E260–73, 91, or 96, E168–67, 77, or 92, or E169–63, 77, or 93 (incorporated by reference as specified in § 60.17) shall be used.

(3)(i) An owner or operator may use engineering judgment rather than procedures in paragraph (b)(2) of this section to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph (b)(2) shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures in paragraph (b)(2).

(c) Any existing reciprocating compressor that becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482–3(a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of § 60.482–3(a), (b), (c), (d), (e), and (h).

(d) An owner or operator may use the following provision in addition to § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

(e) Pumps in light liquid service and valves in gas/vapor and light liquid service within a process unit that is located in the Alaskan North Slope are exempt from the requirements of § 60.482–2 and § 60.482–7.

(f) Open-ended valves or lines containing asphalt as defined in § 60.591 are exempt from the requirements of § 60.482–6(a) through (c).

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000; 72 FR 64896, Nov. 16, 2007]

Subpart GGGa—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

SOURCE: 72 FR 64896, Nov. 16, 2007, unless otherwise noted.

§ 60.590a Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in petroleum refineries.

(2) A compressor is an affected facility.

(3) The group of all the equipment (defined in § 60.591a) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in § 60.591a) for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities subject to subpart VV, subpart VVa, subpart GGG, or subpart KKK of this part are excluded from this subpart.

(e) *Stay of standards*. Owners or operators are not required to comply with the definition of ''process unit'' in § 60.590 of this subpart until the EPA takes final action to require compliance and publishes a document in the FEDERAL REGISTER. While the definition of ''process unit'' is stayed, owners or operators should use the following definition:

Process unit means components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

[49 FR 22606, May 30, 1984, as amended at 73 FR 31376, June 2, 2008]

§ 60.591a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act, in subpart A of part 60, or in subpart VVa of this part, and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square mile area extending from the Brooks Range to the Arctic Ocean.

Asphalt (also known as Bitumen) is a black or dark brown solid or semi-solid thermo-plastic material possessing waterproofing and adhesive properties. It is a complex combination of higher molecular weight organic compounds containing a relatively high proportion of

hydrocarbons having carbon numbers greater than C25 with a high carbon to hydrogen ratio. It is essentially nonvolatile at ambient temperatures with closed cup flash point of 445 °F (230 °C) or greater.

Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.

In hydrogen service means that a compressor contains a process fluid that meets the conditions specified in §60.593a(b).

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.593a(c).

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

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.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

EFFECTIVE DATE NOTE: At 73 FR 31376, June 2, 2008, §60.591a, the definition of ''process unit'' was stayed until further notice.

§60.592a Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§60.482–1a to 60.482–10a as soon as practicable, but no later than 180 days after initial startup.

(b) For a given process unit, an owner or operator may elect to comply with the requirements of paragraphs (b)(1), (2), or (3) of this section as an alternative to the requirements in §60.482–7a.

(1) Comply with §60.483–1a.

(2) Comply with §60.483–2a.

(3) Comply with the Phase III provisions in §63.168, except an owner or operator may elect to follow the provisions in §60.482–7a(f) instead of §63.168 for any valve that is designated as being leakless.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of §60.484a.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §60.485a except as provided in §60.593a.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§60.486a and 60.487a.

§60.593a Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VVa of this part.

(b)(1) Compressors in hydrogen service are exempt from the requirements of §60.592a if an owner or operator demonstrates that a compressor is in hydrogen service.

(2) 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. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform

to the general method described in ASTM E260–73, 91, or 96, E168–67, 77, or 92, or E169–63, 77, or 93 (incorporated by reference as specified in § 60.17) shall be used.

(3)(i) An owner or operator may use engineering judgment rather than procedures in paragraph (b)(2) of this section to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph (b)(2) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures in paragraph (b)(2).

(c) Any existing reciprocating compressor that becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482–3a(a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of § 60.482–3a(a), (b), (c), (d), (e), and (h).

(d) An owner or operator may use the following provision in addition to § 60.485a(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86–78, 82, 90, 93, 95, or 96 (incorporated by reference as specified in § 60.17).

(e) Pumps in light liquid service and valves in gas/vapor and light liquid service within a process unit that is located in the Alaskan North Slope are exempt from the requirements of §§ 60.482–2a and 60.482–7a.

(f) Open-ended valves or lines containing asphalt as defined in § 60.591a are exempt from the requirements of § 60.482–6a(a) through (c).

(g) Connectors in gas/vapor or light liquid service are exempt from the requirements in § 60.482–11a, provided the owner or operator complies with § 60.482–8a for all connectors, not just those in heavy liquid service.

Subpart HHH—Standards of Performance for Synthetic Fiber Production Facilities

SOURCE: 49 FR 13651, Apr. 5, 1984, unless otherwise noted.

§ 60.600 Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which the provisions of this subpart apply is each solvent-spun synthetic fiber process that produces more than 500 Mg (551 ton) of fiber per year.

(b) The provisions of this subpart do not apply to any facility that uses the reaction spinning process to produce spandex fiber or the viscose process to produce rayon fiber.

(c) The provisions of this subpart apply to each facility as identified in paragraph (a) of this section and that commences construction or reconstruction after November 23, 1982. The provisions of this subpart do not apply to facilities that commence modification but not reconstruction after November 23, 1982.

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.601 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.

Acrylic fiber means a manufactured synthetic fiber in which the fiber-forming substance is any long-chain synthetic polymer composed of at least 85 percent by weight of acrylonitrile units.

Makeup solvent means the solvent introduced into the affected facility that compensates for solvent lost from the affected facility during the manufacturing process.

Nongaseous losses means the solvent that is not volatilized during fiber production, and that escapes the process and is unavailable for recovery, or is in a form or concentration unsuitable for economical recovery.

Polymer means any of the natural or synthetic compounds of usually high molecular weight that consist of many

repeated links, each link being a relatively light and simple molecule.

Precipitation bath means the water, solvent, or other chemical bath into which the polymer or prepolymer (partially reacted material) solution is extruded, and that causes physical or chemical changes to occur in the extruded solution to result in a semihardened polymeric fiber.

Rayon fiber means a manufactured fiber composed of regenerated cellulose, as well as manufactured fibers composed of regenerated cellulose in which substituents have replaced not more than 15 percent of the hydrogens of the hydroxyl groups.

Reaction spinning process means the fiber-forming process where a prepolymer is extruded into a fluid medium and solidification takes place by chemical reaction to form the final polymeric material.

Recovered solvent means the solvent captured from liquid and gaseous process streams that is concentrated in a control device and that may be purified for reuse.

Solvent feed means the solvent introduced into the spinning solution preparation system or precipitation bath. This feed stream includes the combination of recovered solvent and makeup solvent.

Solvent inventory variation means the normal changes in the total amount of solvent contained in the affected facility.

Solvent recovery system means the equipment associated with capture, transportation, collection, concentration, and purification of organic solvents. It may include enclosures, hoods, ducting, piping, scrubbers, condensers, carbon adsorbers, distillation equipment, and associated storage vessels.

Solvent-spun synthetic fiber means any synthetic fiber produced by a process that uses an organic solvent in the spinning solution, the precipitation bath, or processing of the sun fiber.

Solvent-spun synthetic fiber process means the total of all equipment having a common spinning solution preparation system or a common solvent recovery system, and that is used in the manufacture of solvent-spun synthetic fiber. It includes spinning solution preparation, spinning, fiber processing and solvent recovery, but does not include the polymer production equipment.

Spandex fiber means a manufactured fiber in which the fiber-forming substance is a long chain synthetic polymer comprised of at least 85 percent of a segmented polyurethane.

Spinning solution means the mixture of polymer, prepolymer, or copolymer and additives dissolved in solvent. The solution is prepared at a viscosity and solvent-to-polymer ratio that is suitable for extrusion into fibers.

Spinning solution preparation system means the equipment used to prepare spinning solutions; the system includes equipment for mixing, filtering, blending, and storage of the spinning solutions.

Synthetic fiber means any fiber composed partially or entirely of materials made by chemical synthesis, or made partially or entirely from chemically-modified naturally-occurring materials.

Viscose process means the fiber forming process where cellulose and concentrated caustic soda are reacted to form soda or alkali cellulose. This reacts with carbon disulfide to form sodium cellulose xanthate, which is then dissolved in a solution of caustic soda. After ripening, the solution is spun into an acid coagulating bath. This precipitates the cellulose in the form of a regenerated cellulose filament.

[49 FR 13651, Apr. 5, 1984; 49 FR 18096, Apr. 27, 1984]

§ 60.602 Standard for volatile organic compounds.

On and after the date on which the initial performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause the discharge into the atmosphere from any affected facility that produces acrylic fibers, VOC emissions that exceed 10 kg/Mg (20 lb/ton) solvent feed to the spinning solution preparation system or precipitation bath. VOC emissions from affected facilities that produce both acrylic and nonacrylic fiber types shall not exceed 10 kg/Mg (20 lb/ton) solvent feed. VOC emissions from affected facilities that produce

only nonacrylic fiber types shall not exceed 17 kg/Mg (34 lb/ton) solvent feed. Compliance with the emission limitations is determined on a 6-month rolling average basis as described in § 60.603.

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.603 Performance test and compliance provisions.

(a) Section 60.8(f) does not apply to the performance test procedures required by this subpart.

(b) Each owner or operator of an affected facility shall determine compliance with the applicable standard in § 60.602(a) by determining and recording monthly the VOC emissions per unit mass solvent feed from each affected facility for the current and preceding 5 consecutive calendar months and using these values to calculate the 6-month average emissions. Each calculation is considered a performance test. The owner or operator of an affected facility shall use the following procedure to determine VOC emissions for each calendar month;

(1) Install, calibrate, maintain, and operate monitoring devices that continuously measure and permanently record for each calendar month the amount of makeup solvent and solvent feed. These values shall be used in calculating VOC emissions according to paragraph (b)(2) of this section. All monitoring devices, meters, and peripheral equipment shall be calibrated and any error recorded. Total compounded error of the flow measuring and recording devices shall not exceed 1 percent accuracy over the operating range. As an alternative to measuring solvent feed, the owner or operator may:

(i) Measure the amount of recovered solvent returned to the solvent feed storage tanks, and use the following equation to determine the amount of solvent feed:

Solvent Feed=Makeup Solvent+Recovered Solvent+Change in the Amount of Solvent Contained in the Solvent Feed Holding Tank.

(ii) Measure and record the amount of polymer introduced into the affected facility and the solvent-to-polymer ratio of the spinning solutions, and use the following equation to determine the amount of solvent feed:

$$\text{Solvent Feed} = \sum_{i=1}^{n}$$

where subscript ''i'' denotes each particular spinning solution used during the test period; values of ''i'' vary from one to the total number of spinning solutions, ''n,'' used during the calendar month.

(2) VOC emissions shall be determined each calendar month by use of the following equations:

$$E = \frac{M_w}{S_W} - N - I \text{ and } M_w = M_V S_p D$$

$$S_W = \frac{S_v S_p D}{K}$$

$$I = \frac{I_E - I_S}{S_W}$$

where all values are for the calendar month only and where

E = VOC Emissions, in kg/Mg (lb/ton) solvent;

S_V = Measured or calculated volume of solvent feed, in liters (gallons);

S_W = Weight of solvent feed, in Mg (ton);

M_V = Measured volume of makeup solvent, in liters (gallons);

M_W = Weight of makeup, in kg (lb);

N = Allowance for nongaseous losses, 13 kg/Mg (26 lb/ton) solvent feed;

S_P = Fraction of measured volume that is actual solvent (excludes water);

D = Density of the solvent, in kg/liter (lb/gallon);

K = Conversion factor, 1,000 kg/Mg (2,000 lb/ton);

I = Allowance for solvent inventory variation or changes in the amount of solvent contained in the affected facility, in kg/Mg (lb/ton) solvent feed (may be positive or negative);

I_S = Amount of solvent contained in the affected facility at the beginning of the test period, as determined by the owner or operator, in kg (lb);

I_E = Amount of solvent contained in the affected facility at the close of the test period, as determined by the owner or operator, in kg (lb).

(3) N, as used in the equation in paragraph (b)(2) of this section, equals 13 kg/Mg (26 lb/ton) solvent feed to the spinning solution preparation system and precipitation bath. This value shall be used in all cases unless an owner or

operator demonstrates to the satisfaction of the Administrator that greater nongaseous losses occur at the affected facility. In this case, the greater value may be substituted in the equation.

[49 FR 13651, Apr. 5, 1984; 49 FR 18096, Apr. 27, 1984, as amended at 65 FR 61769, Oct. 17, 2000]

§ 60.604 Reporting requirements.

(a) The owner or operator of an affected facility shall submit a written report to the Administrator of the following:

(1) The results of the initial performance test; and

(2) The results of subsequent performance tests that indicate that VOC emissions exceed the standards in § 60.602. These reports shall be submitted quarterly at 3-month intervals after the initial performance test. If no exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(b) Solvent-spun synthetic fiber producing facilities exempted from these standards in § 60.600(a) (those producing less than 500 Mg (551 ton) annually) shall report to the Administrator within 30 days whenever extruded fiber for the preceding 12 calendar months exceeds 500 Mg (551 ton).

(c) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternate means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

[49 FR 13651, Apr. 5, 1984, as amended at 55 FR 51384, Dec. 13, 1990; 59 FR 32341, June 23, 1994; 65 FR 61769, Oct. 17, 2000]

Subpart III—Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes

SOURCE: 55 FR 26922, June 29, 1990, unless otherwise noted.

§ 60.610 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that produces any of the chemicals listed in § 60.617 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after October 21, 1983:

(1) Each air oxidation reactor not discharging its vent stream into a recovery system.

(2) Each combination of an air oxidation reactor and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more air oxidation reactors and the common recovery system into which their vent streams are discharged.

(c) Each affected facility that has a total resource effectiveness (TRE) index value greater than 4.0 is exempt from all provisions of this subpart except for §§ 60.612, 60.614(f), 60.615(h), and 60.615(l).

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§ 60.612 through 60.615 and 60.618. The provisions of 40 CFR part 65 also satisfy the criteria of paragraph (c) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40

CFR part 65, subpart D, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3) with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

NOTE: The intent of these standards is to minimize the emissions of VOC through the application of BDT. The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC minus methane and ethane. This emission limit reflects the performance of BDT.

[55 FR 26922, June 29, 1990, as amended at 65 FR 78278, Dec. 14, 2000]

§ 60.611 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

Air Oxidation Reactor means any device or process vessel in which one or more organic reactants are combined with air, or a combination of air and oxygen, to produce one or more organic compounds. Ammoxidation and oxychlorination reactions are included in this definition.

Air Oxidation Reactor Recovery Train means an individual recovery system receiving the vent stream from at least one air oxidation reactor, along with all air oxidation reactors feeding vent streams into this system.

Air Oxidation Unit Process means a unit process, including ammoxidation and oxychlorination unit process, that uses air, or a combination of air and oxygen, as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds.

Boilers means any enclosed combustion device that extracts useful energy in the form of steam.

By Compound means by individual stream components, not carbon equivalents.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a vent stream.

Halogenated Vent Stream means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

Process Heater means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

Process Unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.617. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in § 60.617 that is produced for sale as a final product as that chemical or is produced for use in a process that needs that chemical for the production of other chemicals in another facility. By-products, co-products, and intermediates are considered to be products.

Recovery Device means an individual unit of equipment, such as an absorber, condenser, and carbon adsorber, capable of and used to recover chemicals for use, reuse or sale.

Recovery System means an individual recovery device or series of such devices applied to the same process stream.

Total organic compounds (TOC) means those compounds measured according to the procedures in § 60.614(b)(4). For the purposes of measuring molar composition as required in § 60.614(d)(2)(i), hourly emissions rate as required in § 60.614(d)(5) and § 60.614(e) and TOC concentration as required in § 60.615(b)(4) and § 60.615(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for SIP revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

Total resource effectiveness (TRE) Index Value means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual air oxidation vent stream, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under § 60.614(e).

Vent Stream means any gas stream, containing nitrogen which was introduced as air to the air oxidation reactor, released to the atmosphere directly from any air oxidation reactor recovery train or indirectly, after diversion through other process equipment. The vent stream excludes equipment leaks and relief valve discharges including, but not limited to, pumps, compressors, and valves.

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990]

§ 60.612 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by §§ 60.8 and 60.614 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (minus methane and ethane) by 98 weight-percent, or to a TOC (minus methane and ethane) concentration of 20 ppmv on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

§ 60.613 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.612(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a 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) A flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the inlet of each incinerator and before being joined with any other vent stream.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with § 60.612(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultra-violet sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.612(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each air oxidation reactor within an affected facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) heat input design capacity.

(d) Monitor and record the periods of operation of the boiler or process heater if the design input capacity of the boiler is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(e) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under § 60.612(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in a recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or 0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of 0.02 specific gravity units, each equipped with a continuous recorder;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in a recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an acuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or 0.5 °C, whichever is greater;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device in a recovery system:

(i) An integrating steam flow monitoring device having an accuracy of 10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius

or ±0.5 °C, whichever is greater, both equipped with a continuous recorder;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(f) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.612 with control devices other than an incinerator, boiler, process heater, or flare; or recovery devices other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 26922, June 29, 1990, as amended at 65 FR 61769, Oct. 17, 2000]

§ 60.614 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.612, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b) shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.612(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples and the samples shall be taken during the same time that the TOC samples are taken. The TOC concentration corrected to 3 percent O_2 (C_c) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent 0_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The 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 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg/hr (lb/hr).

E_o=Mass rate of TOC discharged to the atmosphere, kg/hr (lb/hr).

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

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 ppm 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, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/min).

K_2 = 2.494×10^{-6} (1/ppm)(g-mole/scm)(kg/g)(min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm)(lb-mole/scf)(min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components in the sample.

n=Number of components in the sample.

(c) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with § 60.612(a), the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(d) When a flare is used to seek to comply with § 60.612(b), the flare shall comply with the requirements of § 60.18.

(e) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.612(b) and for determining the process vent stream TRE index value to determine compliance under § 60.612(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in § 60.614(e)(2) and (3) shall be, except for the situations outlined in paragraph (e)(1)(ii) of this section, prior to the inlet of any control device, prior to any post-reactor dilution of the stream with air, and prior to any post-reactor introduction of halogenated compounds into the vent stream. No transverse site selection method is needed for vents smaller than 10 centimeters (4 inches) in diameter.

(ii) If any gas stream other than the air oxidation vent stream from the affected facility is normally conducted through the final recovery device.

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which the nonair oxidation stream is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nonair oxidation vent stream and at the outlet of the final recovery device.

(C) This efficiency is applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of the nonair oxidation stream to determine the concentration of TOC in the air oxidation stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.614(e)(4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) D1946–77, or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \left(\sum_{j=1}^{n} C_j H_j \right)$$

where:

H_T = Net heating value of the sample, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).

K_1 = 1.74×10^{-7} (1/ppm)(g-mole/scm)(MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.03×10^{-11} (1/ppm)(lb-mole/scf)(Btu/kcal) (English units) where standard temperature for (lb/mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77, 90, or 94 (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.614(e)(2).

H_j = Net heat of combustion of compound j, kcal/(g-mole) [kcal/(lb-mole)], based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

(5) The emission rate of TOC in the process vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \left[\sum_{j=1}^{n} C_j M_j \right] Q_s$$

where:

E_{TOC} = Measured emission rate of TOC, kg/hr (lb/hr).

K_2 = 2.494×10^{-6} (1/ppm)(g-mole/scm)(kg/g)(min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm)(lb-mole/scf)(min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured by Method 18 as indicated in § 60.614(e)(2).

M_j = Molecular weight of sample j, g/g-mole (lb/lb-mole).

Q_s = Vent stream flow rate, scm/hr (scf/hr), at a temperature of 20 °C (68 °F).

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(f) For purposes of complying with § 60.612(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in paragraph (e)(1) of this section and the flare equation in paragraph (e)(2) of this section and selecting the lower of the two values.

(1) The TRE index value of the vent stream controlled by an incinerator shall be calculated using the following equation:

$$TRE = \frac{1}{E_{TOC}} \left[a + b(Q_s)^{0.88} + c(Q_s) + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5} \right]$$

(i) Where for a vent stream flow rate that is greater than or equal to 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q_s = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in table 1 except for Category E vent streams where $Y_s = Q_s H_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr). a, b, c, d, e, and f are coefficients.

The set of coefficients which apply to a vent stream shall be obtained from table 1.

TABLE 1. AIR OXIDATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 3.5 OR IF 0 ≤ NET HEATING VALUE (Btu/scf) ≤ 94:

Q_s = Vent Stream Flow rate scm/min (scf/min)	a	b	c	d	e	f
$14.2 \le Q_s \le 18.8$	19.18370	0.27580	0.75762	-0.13064	0	0.01025
$(501 \le Q_s \le 664)$	(42.29238)	(0.017220)	(0.072549)	(-0.00030361)	(0)	(0.003803)
$18.8 < Q_s \le 699$	20.00563	0.27580	0.30387	-0.13064	0	0.01025
$(664 < Q_s \le 24,700)$	(44.10441)	(0.017220)	(0.029098)	(-0.00030361)	(0)	(0.003803)
$699 < Q_s \le 1400$	39.87022	0.29973	0.30387	-0.13064	0	0.01449
$(24,700 < Q_s \le 49,000)$	(87.89789)	(0.018714)	(0.029098)	(-0.00030361)	(0)	(0.005376)
$1400 < Q_s \le 2100$	59.73481	0.31467	0.30387	-0.13064	0	0.01775
$(49,000 < Q_s \le 74,000)$	(131.6914)	(0.019647)	(0.029098)	(-0.00030361)	(0)	(0.006585)
$2100 < Q_s \le 2800$	79.59941	0.32572	0.30387	-0.13064	0	0.02049
$(74,000 < Q_s \le 99,000)$	(175.4849)	(0.020337)	(0.029098)	(-0.00030361)	(0)	(0.007602)
$2800 < Q_s \le 3500$	99.46400	0.33456	0.30387	-0.13064	0	0.02291
$(99,000 < Q_s \le 120,000)$	(219.2783)	(0.020888)	(0.029098)	(-0.00030361)	(0)	(0.008500)

DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE < 3.5 (MJ/scm) OR IF NET HEATING VALUE < 94 (Btu/scf):

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Q_s \le 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$(501 \le Q_s \le 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_s \le 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$(664 < Q_s \le 24,700)$	(43.35694)	(0.016696)	(-0.024258)	(0)	(0)	(0.003803)
$699 < Q_s \le 1400$	39.19213	0.29062	-0.25332	0	0	0.01449
$(24,700 < Q_s \le 49,000)$	(86.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_s \le 2100$	58.71768	0.30511	-0.25332	0	0	0.01775
$(49,000 < Q_s \le 74,000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$2100 < Q_s \le 2800$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74,000 < Q_s \le 99,000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2800 < Q_s \le 3500$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99,000 < Q_s \le 120,000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008500)

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 0.48 OR IF 0 ≤ NET HEATING VALUE (Btu/scf) ≤ 13:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Q_S \le 1340$	8.54245	0.10555	0.09030	-0.17109	0	0.01025
$(501 \le Q_S \le 47,300)$	(18.83268)	(0.0065901)	(0.008647)	(-0.00039762)	(0)	(0.003803)
$1340 < Q_S \le 2690$	16.94386	0.11470	0.09030	-0.17109	0	0.01449
$(47,300 < Q_S \le 95,000)$	(37.35443)	(0.0071614)	(0.008647)	(-0.00039762)	(0)	(0.005376)
$2690 < Q_S \le 4040$	25.34528	0.12042	0.09030	-0.17109	0	0.01775
$(95,000 < Q_S \le 143,000)$	(55.87620)	(0.0075185)	(0.008647)	(-0.00039762)	(0)	(0.00658

DESIGN CATEGORY C. FOR NONHALOGENTED PROCESS VENT STREAMS, IF 0.48 < NET HEATING VALUE (MJ/scm) ≤ 1.9 OR IF 13 < NET HEATING VALUE (Btu/scf) ≤ 51:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Q_S \le 1340$	9.25233	0.06105	0.31937	-0.16181	0	0.01025
$(501 \le Q_S \le 47,300)$	(20.39769)	(0.003812)	(0.030582)	(-0.00037605)	(0)	(0.003803)
$1340 < Q_S \le 2690$	18.36363	0.06635	0.31937	-0.16181	0	0.01449
$(47,300 < Q_S \le 95,000)$	(40.48446)	(0.004143)	(0.030582)	(-0.00037605)	(0)	(0.005376)
$2690 < Q_S \le 4040$	27.47492	0.06965	0.31937	-0.16181	0	0.01775
$(95,000 < Q_S \le 143,000)$	(60.57121)	(0.004349)	(0.030582)	(-0.00037605)	(0)	(0.006585)

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6 OR IF 51 < NET HEATING VALUE (Btu/scf) ≤ 97:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Q_S \le 1180$	6.67868	0.06943	0.02582	0	0	0.01025
$(501 \le Q_S \le 41,700)$	(14.72382)	(0.004335)	(0.002472)	(0)	(0)	(0.003803)
$1180 < Q_S \le 2370$	13.21633	0.07546	0.02582	0	0	0.01449
$(41,700 < Q_S \le 83,700)$	(29.13672)	(0.004711)	(0.002472)	(0)	(0)	(0.005376)
$2370 < Q_S \le 3550$	19.75398	0.07922	0.02582	0	0	0.01775
$(83,700 < Q_S \le 125,000)$	(43.54962)	(0.004946)	(0.002472)	(0)	(0)	(0.00658

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Y_S \le 1180$	6.67868	0	0	-0.00707	0.02220	0.01025
$(501 \le Y_S \le 41,700)$	(14.72382)	(0)	(0)	(-0.0000164)	(0.0001174)	(0.003803)
$1180 < Y_S \le 2370$	13.21633	0	0	-0.00707	0.02412	0.01449
$(41,700 < Y_S \le 83,700)$	(29.13672)	(0)	(0)	(-0.0000164)	(0.0001276)	(0.005376)
$2370 < Y_S \le 3550$	19.75398	0	0	-0.00707	0.02533	0.01775
$(83,700 < Y_S \le 125,000)$	(43.54962)	(0)	(0)	(-0.0000164)	(0.0001340)	(0.006585)

(ii) Where for a vent stream flow rate that is less than 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.
Q_s = 14.2 scm/min (501 scf/min).
H_T = (FLOW)(HVAL)/Q_s.

Where the following inputs are used:

FLOW = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

HVAL = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for

determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in table 1 except for Category E vent streams where $Y_s = Q_s H_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}}\left[a(Q_s) + b(Q_s)^{0.8} + c(Q_s)(H_T) + d(E_{TOC}) + e\right]$$

where:

TRE = TRE index value.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

Q_s = Vent stream flow rate, scm/min (scf/min), at a standard temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from table 2.

TABLE 2—AIR OXIDATION PROCESSES NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE

	a	b	c	d	e
H_T < 11.2 MJ/scm	2.25	0.288	−0.193	(−0.0051	2.08
(H_T < 301 Btu/scf)	(0.140)	(0.0367)	(−0.000448)	(−0.0051)	(4.59)
H_T ≥ 11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08
H_T ≥ 301 Btu/scf)	(0.0193)	(0.00788)	(−0.000010)	(−0.0034)	(4.59)

(g) Each owner or operator of an affected facility seeking to comply with § 60.610(c) or § 60.612(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Some examples of process changes are changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.614 to determine compliance with § 60.612(a). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the initial TRE index value is greater than 4.0 and the recalculated TRE index value is less than or equal to 4.0, but greater than 1.0, the owner or operator shall conduct a performance test in accordance with § 60.8 and § 60.614 and shall comply with §§ 60.613, 60.614, and 60.615. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 65 FR 61769, Oct. 17, 2000]

§ 60.615 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.612 shall notify the Administrator of the specific provisions of § 60.612

(§ 60.612 (a) (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.612 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.614 within 180 days.

(b) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records 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 § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with § 60.612(a), a report containing performance test data need not be submitted, but a report containing the information of § 60.615(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to this subpart seeks to demonstrate compliance with § 60.612(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.614(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.614(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.612(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to comply with § 60.612(b) through the use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator seeks to demonstrate compliance with § 60.612(c):

(i) Where an absorber is the final recovery device in a recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature of the absorbing liquid, measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) Where a condenser is the final recovery device in a recovery system, the average exit (product side) temperature, measured at least every 15 minutes and average over the same time period of the performance testing while the vent stream is normally routed and constituted.

(iii) Where a carbon adsorber is the final recovery device in a recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s), and duration of the carbon bed

steaming cycle (all measured while the vent stream is normally routed and constituted), or

(iv) As an alternative to § 60.615(b)(4)(i), (ii) or (iii), the concentration level or reading indicated by the organic monitoring device at the outlet of the absorber, condenser, or carbon adsorber measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) 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 § 60.613(a) and (c) 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. Where a combustion device is used by an owner or operator seeking to demonstrate compliance with § 60.612(a) or (c), 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 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with § 60.612(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which 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 at which compliance with § 60.612(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test at which compliance with § 60.612(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with § 60.612(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr).

(4) For boilers 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 § 60.612(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flow indication specified under § 60.613(a)(2), § 60.613(b)(2), and § 60.613(c)(1), as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater to comply with § 60.612(a) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler 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).

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified in § 60.613(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) 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 § 60.613(e) 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. Where the owner or operator seeks to demonstrate compliance with § 60.612(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he or she will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) When a condenser is the final recovery device in a recovery system, and where an organic monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a recovery system and where an organic monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent greater than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and an organic monitoring device approved by the Administrator is used, all 3-hour periods of operation during which the average concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(h) Each owner or operator subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.612(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or air oxidation reactors;

(2) Any recalculation of the TRE index value performed pursuant to § 60.614(f);

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.614(d).

(i) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(j) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.612 shall submit to the Administrator semiannual reports of the following information. The initial report shall be submitted within 6 months after the initial start-up-date.

(1) Exceedances of monitored parameters recorded under § 60.615(c) and (g).

(2) All periods recorded under § 60.615(d) when the vent stream is diverted from the control device or has no flow rate.

(3) All periods recorded under § 60.615(e) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.615(f) in which the pilot flame of the flare was absent.

(5) Any recalculation of the TRE index value, as recorded under § 60.615(h).

(k) The requirements of § 60.615(j) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.615(j), provided that they comply with the requirements established by the State.

(l) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility seeks to demonstrate compliance with the standards specified under § 60.612 other than as provided under § 60.613(a), (b), (c), and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.616 Reconstruction.

For purposes of this subpart ''fixed capital cost of the new components,'' as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following October 21, 1983. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.617 Chemicals affected by subpart III.

Chemical name	CAS No.*
Acetaldehyde	75–07–0
Acetic acid	64–19–7
Acetone	67–64–1
Acetonitrile	75–05–8
Acetophenone	98–86–2
Acrolein	107–02–8
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Anthraquinone	84–65–1
Benzaldehyde	100–52–7
Benzoic acid, tech	65–85–0
1,3-Butadiene	106–99–0
p-t-Butyl benzoic acid	98–73–7
N-Butyric acid	107–92–6
Crotonic acid	3724–65–0
Cumene hydroperoxide	80–15–9
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Dimethyl terephthalate	120–61–6
Ethylene dichloride	107–06–2
Ethylene oxide	75–21–8
Formaldehyde	50–00–0
Formic acid	64–18–6
Glyoxal	107–22–2
Hydrogen cyanide	74–90–8
Isobutyric acid	79–31–2
Isophthalic acid	121–91–5
Maleic anhydride	108–31–6
Methyl ethyl ketone	78–93–3
a-Methyl styrene	98–83–9
Phenol	108–95–2
Phthalic anhydride	85–44–9
Propionic acid	79–09–4
Propylene oxide	75–56–9
Styrene	100–42–5
Terephthalic acid	100–21–0

*CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

§ 60.618 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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: § 60.613(e).

Subpart JJJ—Standards of Performance for Petroleum Dry Cleaners

SOURCE: 49 FR 37331, Sept. 21, 1984, unless otherwise noted.

§ 60.620 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities located at a petroleum dry cleaning plant with a total manufacturers' rated dryer capacity equal to or greater than 38 kilograms (84 pounds): Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks.

(1) When the affected facility is installed in an existing plant that is not expanding the manufacturers' rated capacity of its petroleum solvent

dryer(s), the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated capacity for each existing petroleum solvent dryer.

(2) When the affected facility is installed in a plant that is expanding the manufacturers' rated capacity of its petroleum solvent dryers, the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated dryer capacity for each existing and proposed new petroleum solvent dryer.

(3) When the affected facilty is installed in a new plant, the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated dryer capacity for each proposed new petroleum solvent dryer.

(4) The petroleum solvent dryers considered in the determination of the total manufacturers' rated dryer capacity are those new and existing dryers in the plant that will be in service at any time after the proposed new source or modification commences operation.

(b) Any facility under paragraph (a) of this section that commences construction or modification after December 14, 1982, is subject to the requirements of this subpart with the following exception. A dryer installed between December 14, 1982, and September 21, 1984, in a plant with an annual solvent consumption level of less than 17,791 liters (4,700 gallons), is exempt from the requirements of this subpart.

[49 FR 37331, Sept. 21, 1984, as amended at 50 FR 49026, Nov. 27, 1985; 65 FR 61773, Oct. 17, 2000]

§ 60.621 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A of this part.

Cartridge filter means a discrete filter unit containing both filter paper and activated carbon that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device.

Dryer means a machine used to remove petroleum solvent from articles of clothing or other textile or leather goods, after washing and removing of excess petroleum solvent, together with the piping and ductwork used in the installation of this device.

Manufacturers' rated dryer capacity means the dryer's rated capacity of articles, in pounds or kilograms of clothing articles per load, dry basis, that is typically found on each dryer on the manufacturer's name-plate or in the manufacturer's equipment specifications.

Perceptible leaks means any petroleum solvent vapor or liquid leaks that are conspicuous from visual observation or that bubble after application of a soap solution, such as pools or droplets of liquid, open containers or solvent, or solvent laden waste standing open to the atmosphere.

Petroleum dry cleaner means a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks.

Settling tank means a container that gravimetrically separates oils, grease, and dirt from petroleum solvent, together with the piping and ductwork used in the installation of this device.

Solvent filter means a discrete solvent filter unit containing a porous medium that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device.

Solvent recovery dryer means a class of dry cleaning dryers that employs a condenser to condense and recover solvent vapors evaporated in a closed-loop stream of heated air, together with the piping and ductwork used in the installation of this device.

Still means a device used to volatilize, separate, and recover petroleum solvent from contaminated solvent, together with the piping and ductwork used in the installation of this device.

Washer means a machine which agitates fabric articles in a petroleum solvent bath and spins the articles to remove the solvent, together with the piping and ductwork used in the installation of this device.

§ 60.622 Standards for volatile organic compounds.

(a) Each affected petroleum solvent dry cleaning dryer that is installed at

a petroleum dry cleaning plant after December 14, 1982, shall be a solvent recovery dryer. The solvent recovery dryer(s) shall be properly installed, operated, and maintained.

(b) Each affected petroleum solvent filter that is installed at a petroleum dry cleaning plant after December 14, 1982, shall be a cartridge filter. Cartridge filters shall be drained in their sealed housings for at least 8 hours prior to their removal

(c) Each manufacturer of an affected petroleum solvent dryer shall include leak inspection and leak repair cycle information in the operating manual and on a clearly visible label posted on each affected facility. Such information should state:

> To protect against fire hazards, loss of valuable solvents, and emissions of solvent to the atmosphere, periodic inspection of this equipment for evidence of leaks and prompt repair of any leaks is recommended. The U.S. Environmental Protection Agency recommends that the equipment be inspected every 15 days and all vapor or liquid leaks be repaired within the subsequent 15 day period.

[49 FR 37331, Sept. 21, 1984, as amended at 50 FR 49026, Nov. 27, 1985]

§ 60.623 Equivalent equipment and procedures.

(a) Upon written application from any person, the Administrator may approve the use of equipment or procedures that have been demonstrated to his satisfaction to be equivalent, in terms of reducing VOC emissions 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; the testing method; the date, time and location of the test; and a description of the test results. Written applications shall be submitted to the Administrator, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

(b) The Administrator will make a preliminary determination of whether or not the application for equivalency is approvable and will publish a notice of these findings in the FEDERAL REGISTER. After notice and opportunity for public hearing, the Administrator will publish the final determination in the FEDERAL REGISTER.

§ 60.624 Test methods and procedures.

Each owner or operator of an affected facility subject to the provisions of § 60.622(a) shall perform an initial test to verify that the flow rate of recovered solvent from the solvent recovery dryer at the termination of the recovery cycle is no greater than 0.05 liters per minute. This test shall be conducted for a duration of no less than 2 weeks during which no less than 50 percent of the dryer loads shall be monitored for their final recovered solvent flow rate. The suggested point for measuring the flow rate of recovered solvent is the outlet of the solvent-water separator. Near the end of the recovery cycle, the entire flow of recovered solvent should be diverted to a graduated cylinder. As the recovered solvent collects in the graduated cylinder, the elapsed time is monitored and recorded in periods of greater than or equal to 1 minute. At the same time, the volume of solvent in the graduated cylinder is monitored and recorded to determine the volume of recovered solvent that is collected during each time period. The recovered solvent flow rate is calculated by dividing the volume of solvent collected per period by the length of time elapsed during the period and converting the result with appropriate factors into units of liters per minute. The recovery cycle and the monitoring procedure should continue until the flow rate of solvent is less than or equal to 0.05 liter per minute. The type of articles cleaned and the total length of the cycle should then be recorded.

[49 FR 37331, Sept. 21, 1984, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.625 Recordkeeping requirements.

Each owner or operator of an affected facility subject to the provisions of this subpart shall maintain a record of the performance test required under § 60.624.

Subpart KKK—Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

SOURCE: 50 FR 26124, June 24, 1985, unless otherwise noted.

§ 60.630 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in onshore natural gas processing plants.

(2) A compressor in VOC service or in wet gas service is an affected facility.

(3) The group of all equipment except compressors (definied in § 60.631) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 20, 1984, and on or before August 23, 2011, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in § 60.631) for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities covered by subpart VV or subpart GGG of 40 CFR part 60 are excluded from this subpart.

(e) A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of this subpart.

[50 FR 26124, June 24, 1985, as amended at 77 FR 49542, Aug. 16, 2012]

§ 60.631 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A or subpart VV of part 60; and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square-mile area extending from the Brooks Range to the Arctic Ocean.

Equipment means each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart.

Field gas means feedstock gas entering the natural gas processing plant.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.485(e) or § 60.633(h)(2).

In wet gas service means that a piece of equipment contains or contacts the field gas before the extraction step in the process.

Natural gas liquids means the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from field gas.

Natural gas processing plant (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

Nonfractionating plant means any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

Onshore means all facilities except those that are located in the territorial seas or on the outer continental shelf.

Process unit means equipment assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

Reciprocating compressor means a piece of equipment that increases the pressure of a process gas by positive displacement, employing linear movement of the driveshaft.

§ 60.632 Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.482–1 (a), (b), and (d) and 60.482–2

through 60.482–10, except as provided in § 60.633, as soon as practicable, but no later than 180 days after initial startup.

(b) An owner or operator may elect to comply with the requirements of §§ 60.483–1 and 60.483–2.

(c) An owner or operator may apply to the Administrator for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of § 60.634 of this subpart.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.485 except as provided in § 60.633(f) of this subpart.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486 and 60.487 except as provided in §§ 60.633, 60.635, and 60.636 of this subpart.

(f) An owner or operator shall use the following provision instead of § 60.485(d)(1): Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator demonstrates that the piece of equipment is not in VOC service or in wet gas service. For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight. For a piece of equipment to be considered in wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process. For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM E169–63, 77, or 93, E168–67, 77, or 92, or E260–73, 91, or 96 (incorporated by reference as specified in § 60.17) shall be used.

[50 FR 26124, June 24, 1985, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.633 Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VV.

(b)(1) Each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks by the methods specified in § 60.485(b) except as provided in § 60.632(c), paragraph (b)(4) of this section, and § 60.482–4 (a) through (c) of subpart VV.

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3)(i) 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 § 60.482–9.

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(4)(i) Any pressure relief device that is located in a nonfractionating plant that is monitored only by nonplant personnel may be monitored after a pressure release the next time the monitoring personnel are on site, instead of within 5 days as specified in paragraph (b)(1) of this section and § 60.482–4(b)(1) of subpart VV.

(ii) No pressure relief device described in paragraph (b)(4)(i) of this section shall be allowed to operate for more than 30 days after a pressure release without monitoring.

(c) Sampling connection systems are exempt from the requirements of § 60.482–5.

(d) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a nonfractionating plant that does not have the design capacity to process 283,200 standard cubic meters per day (scmd) (10 million standard cubic feet per day) or more of field gas are exempt from the routine monitoring requirements of §§ 60.482–2(a)(1) and 60.482–7(a), and paragraph (b)(1) of this section.

(e) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service within a process unit that is located in the Alaskan North Slope are exempt from the routine monitoring requirements of §§ 60.482–

2(a)(1), 60.482–7(a), and paragraph (b)(1) of this section.

(f) Reciprocating compressors in wet gas service are exempt from the compressor control requirements of § 60.482–3.

(g) Flares used to comply with this subpart shall comply with the requirements of § 60.18.

(h) An owner or operator may use the following provisions instead of § 60.485(e):

(1) Equipment is in heavy liquid service if the weight percent evaporated is 10 percent or less at 150 °C (302 °F) as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

(2) Equipment is in light liquid service if the weight percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

[50 FR 26124, June 24, 1985, as amended at 51 FR 2702, Jan. 21, 1986; 65 FR 61773, Oct. 17, 2000]

§ 60.634 Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under any design, equipment, work practice or operational standard, the Administrator will publish, in the FEDERAL REGISTER a notice permitting the use of that alternative means for the purpose of compliance with that standard. The notice may condition 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 notice and an opportunity for a public hearing.

(c) The Administrator will consider applications under this section from either owners or operators of affected facilities, or manufacturers of control equipment.

(d) The Administrator will treat applications under this section according to the following criteria, except in cases where he concludes that other criteria are appropriate:

(1) The applicant must collect, verify and submit test data, covering a period of at least 12 months, necessary to support the finding in paragraph (a) of this section.

(2) If the applicant is an owner or operator of an affected facility, he must commit in writing to operate and maintain the alternative means so as to achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under the design, equipment, work practice or operational standard.

§ 60.635 Recordkeeping requirements.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of § 60.486.

(b) The following recordkeeping requirements shall apply to pressure relief devices subject to the requirements of § 60.633(b)(1) of this subpart.

(1) When each leak is detected as specified in § 60.633(b)(2), a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.

(2) When each leak is detected as specified in § 60.633(b)(2), the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(i) The instrument and operator identification numbers and the equipment identification number.

(ii) The date the leak was detected and the dates of each attempt to repair the leak.

(iii) Repair methods applied in each attempt to repair the leak.

(iv) ''Above 10,000 ppm'' if the maximum instrument reading measured by the methods specified in paragraph (a) of this section after each repair attempt is 10,000 ppm or greater.

(v) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(vi) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(viii) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(ix) The date of successful repair of the leak.

(x) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of § 60.482–4(a). The designation of equipment subject to the provisions of § 60.482–4(a) shall be signed by the owner or operator.

(c) An owner or operator shall comply with the following requirement in addition to the requirement of § 60.486(j): Information and data used to demonstrate that a reciprocating compressor is in wet gas service to apply for the exemption in § 60.633(f) shall be recorded in a log that is kept in a readily accessible location.

§ 60.636 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of § 60.487.

(b) An owner or operator shall include the following information in the initial semiannual report in addition to the information required in § 60.487(b)(1)–(4): Number of pressure relief devices subject to the requirements of § 60.633(b) except for those pressure relief devices designated for no detectable emissions under the provisions of § 60.482–4(a) and those pressure relief devices complying with § 60.482–4(c).

(c) An owner or operator shall include the following information in all semiannual reports in addition to the information required in § 60.487(c)(2) (i) through (vi):

(1) Number of pressure relief devices for which leaks were detected as required in § 60.633(b)(2) and

(2) Number of pressure relief devices for which leaks were not repaired as required in § 60.633(b)(3).

Subpart LLL—Standards of Performance for SO_2 Emissions From Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

SOURCE: 50 FR 40160, Oct. 1, 1985, unless otherwise noted.

§ 60.640 Applicability and designation of affected facilities.

(a) The provisions of this subpart are applicable to the following affected facilities that process natural gas: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit.

(b) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to comply with § 60.647(c) but are not required to comply with §§ 60.642 through 60.646.

(c) The provisions of this subpart are applicable to facilities located on land and include facilities located onshore which process natural gas produced from either onshore or offshore wells.

(d) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section which commences construction or modification after January 20, 1984, and on or before August 23, 2011.

(e) The provisions of this subpart do not apply to sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere.

[50 FR 40160, Oct. 1, 1985, as amended at 77 FR 49542, Aug. 16, 2012]

§ 60.641 Definitions.

All terms used in this subpart not defined below are given the meaning in the Act and in subpart A of this part.

Acid gas means a gas stream of hydrogen sulfide (H_2S) and carbon dioxide (CO_2) that has been separated from sour natural gas by a sweetening unit.

Natural gas means a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface.

The principal hydrocarbon constituent is methane.

Onshore means all facilities except those that are located in the territorial seas or on the outercontinental shelf.

Reduced sulfur compounds means H_2S, carbonyl sulfide (COS), and carbon disulfide (CS_2).

Sulfur production rate means the rate of liquid sulfur accumulation from the sulfur recovery unit.

Sulfur recovery unit means a process device that recovers element sulfur from acid gas.

Sweetening unit means a process device that separates the H_2S and CO_2 contents from the sour natural gas stream.

Total SO_2 equivalents means the sum of volumetric or mass concentrations of the sulfur compounds obtained by adding the quantity existing as SO_2 to the quantity of SO_2 that would be obtained if all reduced sulfur compounds were converted to SO_2 (ppmv or kg/dscm (lb/dscf)).

E The sulfur emission rate expressed as elemental sulfur, kilograms per hour (kg/hr) [pounds per hour (lb/hr)], rounded to one decimal place.

R The sulfur emission reduction efficiency achieved in percent, carried to one decimal place.

S The sulfur production rate, kilograms per hour (kg/hr) [pounds per hour (lb/hr)], rounded to one decimal place.

X The sulfur feed rate from the sweetening unit (i.e., the H_2S in the acid gas), expressed as sulfur, Mg/D(LT/D), rounded to one decimal place.

Y The sulfur content of the acid gas from the sweetening unit, expressed as mole percent H_2S (dry basis) rounded to one decimal place.

Z The minimum required sulfur dioxide (SO_2) emission reduction efficiency, expressed as percent carried to one decimal place. Z_i refers to the reduction efficiency required at the initial performance test. Z_c refers to the reduction efficiency required on a continuous basis after compliance with Z_i has been demonstrated.

[50 FR 40160, Oct. 1, 1985, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.642 Standards for sulfur dioxide.

(a) During the initial performance test required by § 60.8(b), each owner or operator shall achieve at a minimum, an SO_2 emission reduction efficiency (Z_i) to be determined from table 1 based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

(b) After demonstrating compliance with the provisions of paragraph (a) of this section, the owner or operator shall achieve at a minimum, an SO_2 emission reduction efficiency (Z_c) to be determined from table 2 based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

Table 1. REQUIRED MINIMUM INITIAL SO_2 EMISSION REDUCTION EFFICIENCY (Z_i)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$Y \geq 50$	79.0	. . . . . $88.51X^{0.0101}Y^{0.0125}$ . . . . . or 99.8, whichever is smaller		
$20 \leq Y < 50$	79.0	. . . . $88.51X^{0.0101}Y^{0.0125}$ . . . or 97.9, whichever is smaller		97.9
$10 \leq Y < 20$	79.0	$88.51X^{0.0101}Y^{0.0125}$ or 93.5, whichever is smaller	93.5	93.5
$Y < 10$	79.0	79.0	79.0	79.0

Table 2. REQUIRED MINIMUM SO_2 EMISSION REDUCTION EFFICIENCY (Z_c)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$Y \geq 50$	74.0	. . . . . $85.35X^{0.0144}Y^{0.0128}$ . . . . . or 99.8, whichever is smaller		
$20 \leq Y < 50$	74.0	. . . . $85.35X^{0.0144}Y^{0.0128}$ . . . or 97.5, whichever is smaller		97.5
$10 \leq Y < 20$	74.0	$85.35X^{0.0144}Y^{0.0128}$ or 90.8, whichever is smaller	90.8	90.8
$Y < 10$	74.0	74.0	74.0	74.0

§ 60.643 Compliance provisions.

(a)(1) To determine compliance with the standards for sulfur dioxide specified in § 60.642(a), during the initial performance test as required by § 60.8, the

minimum required sulfur dioxide emission reduction efficiency (Z) is compared to the emission reduction efficiency (R) achieved by the sulfur recovery technology.

(i) If $R \geq Z_i$, the affected facility is in compliance.

(ii) If $R < Z_i$, the affected facility is not in compliance.

(2) Following the initial determination of compliance as required by § 60.8, any subsequent compliance determinations that may be required by the Administrator would compare R to Z_c.

(b) The emission reduction efficiency (R) achieved by the sulfur reduction technology shall be determined using the procedures in § 60.644(c)(1).

[50 FR 40160, Oct. 1, 1985, as amended at 54 FR 6679, Feb. 14, 1989]

§ 60.644 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in paragraph § 60.8(b).

(b) During a performance test required by § 60.8, the owner or operator shall determine the minimum required reduction efficiencies (Z) of SO_2 emissions as required in § 60.642 (a) and (b) as follows:

(1) The average sulfur feed rate (X) shall be computed as follows:

$$X = KQ_a Y$$

Where:

X = average sulfur feed rate, Mg/D (LT/D).

Q_a = average volumetric flow rate of acid gas from sweetening unit, dscm/day (dscf/day).

Y = average H_2S concentration in acid gas feed from sweetening unit, percent by volume, expressed as a decimal.

K = (32 kg S/kg-mole)/((24.04 dscm/kg-mole)(1000 kg S/ Mg)) = 1.331×10^{-3} Mg/dscm, for metric units

= (32 lb S/lb-mole)/((385.36 dscf/lb-mole)(2240 lb S/long ton))

= 3.707×10^{-5} long ton/dscf, for English units.

(2) The continuous readings from the process flowmeter shall be used to determine the average volumetric flow rate (Q_a) in dscm/day (dscf/day) of the acid gas from the sweetening unit for each run.

(3) The Tutwiler procedure in § 60.648 or a chromatographic procedure following ASTM E–260 (incorporated by reference—see § 60.17) shall be used to determine the H_2S concentration in the acid gas feed from the sweetening unit. At least one sample per hour (at equally spaced intervals) shall be taken during each 4-hour run. The arithmetic mean of all samples shall be the average H_2S concentration (Y) on a dry basis for the run. By multiplying the result from the Tutwiler procedure by 1.62×10^{-3}, the units gr/100 scf are converted to volume percent.

(4) Using the information from paragraphs (b) (1) and (3), tables 1 and 2 shall be used to determine the required initial (Z_i) and continuous (Z_c) reduction efficiencies of SO_2 emissions.

(c) The owner or operator shall determine compliance with the SO_2 standards in § 60.642 (a) or (b) as follows:

(1) The emission reduction efficiency (R) achieved by the sulfur recovery technology shall be computed for each run using the following equation:

$$R=(100\ S)/(S+E)$$

(2) The level indicators or manual soundings shall be used to measure the liquid sulfur accumulation rate in the product storage tanks. Readings taken at the beginning and end of each run, the tank geometry, sulfur density at the storage temperature, and sample duration shall be used to determine the sulfur production rate (S) in kg/hr (lb/hr) for each run.

(3) The emission rate of sulfur shall be computed for each run as follows:

$$E = C_e Q_{sd} / K_1$$

Where:

E = emission rate of sulfur per run, kg/hr.

C_e = concentration of sulfur equivalent (SO_2 + reduced sulfur), g/dscm (lb/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

K_1 = conversion factor, 1000 g/kg (7000 gr/lb).

(4) The concentration (C_e) of sulfur equivalent shall be the sum of the SO_2 and TRS concentrations, after being converted to sulfur equivalents. For each run and each of the test methods specified in this paragraph (c) of this section, the sampling time shall be at

least 4 hours. Method 1 shall be used to select the sampling site. The sampling point in the duct shall be at the centroid of the cross-section if the area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than 1 m (39 in.) if the cross-sectional area is 5 m^2 or more, and the centroid is more than 1 m (39 in.) from the wall.

(i) Method 6 shall be used to determine the SO_2 concentration. Eight samples of 20 minutes each shall be taken at 30-minute intervals. The arithmetic average shall be the concentration for the run. The concentration shall be multiplied by 0.5×10^{-3} to convert the results to sulfur equivalent.

(ii) Method 15 shall be used to determine the TRS concentration from reduction-type devices or where the oxygen content of the effluent gas is less than 1.0 percent by volume. The sampling rate shall be at least 3 liters/min (0.1 ft^3/min) to insure minimum residence time in the sample line. Sixteen samples shall be taken at 15-minute intervals. The arithmetic average of all the samples shall be the concentration for the run. The concentration in ppm reduced sulfur as sulfur shall be multiplied by 1.333×10^{-3} to convert the results to sulfur equivalent.

(iii) Method 16A or 15 shall be used to determine the reduced sulfur concentration from oxidation-type devices or where the oxygen content of the effluent gas is greater than 1.0 percent by volume. Eight samples of 20 minutes each shall be taken at 30-minute intervals. The arithmetic average shall be the concentration for the run. The concentration in ppm reduced sulfur as sulfur shall be multiplied by 1.333×10^{-3} to convert the results to sulfur equivalent.

(iv) Method 2 shall be used to determine the volumetric flow rate of the effluent gas. A velocity traverse shall be conducted at the beginning and end of each run. The arithmetic average of the two measurements shall be used to calculate the volumetric flow rate (Q_{sd}) for the run. For the determination of the effluent gas molecular weight, a single integrated sample over the 4-hour period may be taken and analyzed or grab samples at 1-hour intervals may be taken, analyzed, and averaged. For the moisture content, two samples of at least 0.10 dscm (3.5 dscf) and 10 minutes shall be taken at the beginning of the 4-hour run and near the end of the time period. The arithmetic average of the two runs shall be the moisture content for the run.

(d) To comply with § 60.646(d), the owner or operator shall obtain the information required by using the monitoring devices in paragraph (b) or (c) of this section.

[54 FR 6679, Feb. 14, 1989, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.645 [Reserved]

§ 60.646 Monitoring of emissions and operations.

(a) The owner or operator subject to the provisions of § 60.642 (a) or (b) shall install, calibrate, maintain, and operate monitoring devices or perform measurements to determine the following operations information on a daily basis:

(1) The accumulation of sulfur product over each 24-hour period: The monitoring method may incorporate the use of an instrument to measure and record the liquid sulfur production rate, or may be a procedure for measuring and recording the sulfur liquid levels in the storage tanks with a level indicator or by manual soundings, with subsequent calculation of the sulfur production rate based on the tank geometry, stored sulfur density, and elapsed time between readings. The method shall be designed to be accurate within ±2 percent of the 24-hour sulfur accumulation.

(2) The H_2S concentration in the acid gas from the sweetening unit for each 24-hour period: At least one sample per 24-hour period shall be collected and analyzed using the method specified in § 60.644(b)(1). The Administrator may require the owner or operator to demonstrate that the H_2S concentration obtained from one or more samples over a 24-hour period is within ±20 percent of the average of 12 samples collected at equally spaced intervals during the 24-hour period. In instances where the H_2S concentration of a single sample is not within ±20 percent of the

average of the 12 equally spaced samples, the Administrator may require a more frequent sampling schedule.

(3) The average acid gas flow rate from the sweetening unit: The owner or operator shall install and operate a monitoring device to continuously measure the flow rate of acid gas. The monitoring device reading shall be recorded at least once per hour during each 24-hour period. The average acid gas flow rate shall be computed from the individual readings.

(4) The sulfur feed rate (X): For each 24-hour period, X shall be computed using the equation in § 60.644(b)(3).

(5) The required sulfur dioxide emission reduction efficiency for the 24-hour period: The sulfur feed rate and the H_2S concentration in the acid gas for the 24-hour period as applicable, shall be used to determine the required reduction efficiency in accordance with the provisions of § 60.642(b).

(b) Where compliance is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate monitoring devices and continuous emission monitors as follows:

(1) A continuous monitoring system to measure the total sulfur emission rate (E) of SO_2 in the gases discharged to the atmosphere. The SO_2 emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system shall be set so that the equivalent emission limit of § 60.642(b) will be between 30 percent and 70 percent of the measurement range of the instrument system.

(2) Except as provided in paragraph (b)(3) of this section: A monitoring device to measure the temperature of the gas leaving the combustion zone of the incinerator, if compliance with § 60.642(a) is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device. The monitoring device shall be certified by the manufacturer to be accurate to within ±1 percent of the temperature being measured. When performance tests are conducted under the provision of § 60.8 to demonstrate compliance with the standards under § 60.642, the temperature of the gas leaving the incinerator combustion zone shall be determined using the monitoring device. If the volumetric ratio of sulfur dioxide to sulfur dioxide plus total reduced sulfur (expressed as SO_2) in the gas leaving the incinerator is ≤0.98, then temperature monitoring may be used to demonstrate that sulfur dioxide emission monitoring is sufficient to determine total sulfur emissions. At all times during the operation of the facility, the owner or operator shall maintain the average temperature of the gas leaving the combustion zone of the incinerator at or above the appropriate level determined during the most recent performance test to ensure the sulfur compound oxidation criteria are met. Operation at lower average temperatures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that the minimum incinerator temperature be reestablished by conducting new performance tests under § 60.8.

(3) Upon promulgation of a performance specification of continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants, the owner or operator may, as an alternative to paragraph (b)(2) of this section, install, calibrate, maintain, and operate a continuous emission monitoring system for total reduced sulfur compounds as required in paragraph (d) of this section in addition to a sulfur dioxide emission monitoring system. The sum of the equivalent sulfur mass emission rates from the two monitoring systems shall be used to compute the total sulfur emission rate (E).

(c) Where compliance is achieved through the use of a reduction control system not followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system to measure the emission rate of reduced sulfur compounds as SO_2 equivalent in the gases discharged to the atmosphere. The SO_2 equivalent compound emission

rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system shall be set so that the equivalent emission limit of § 60.642(b) will be between 30 and 70 percent of the measurement range of the system. This requirement becomes effective upon promulgation of a performance specification for continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants.

(d) For those sources required to comply with paragraph (b) or (c) of this section, the average sulfur emission reduction efficiency achieved (R) shall be calculated for each 24-hour clock internal. The 24-hour interval may begin and end at any selected clock time, but must be consistent. The 24-hour average reduction efficiency (R) shall be computed based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E), using the equation in § 60.644(c)(1).

(1) Data obtained from the sulfur production rate monitoring device specified in paragraph (a) of this section shall be used to determine S.

(2) Data obtained from the sulfur emission rate monitoring systems specified in paragraphs (b) or (c) of this section shall be used to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system must provide at least one data point in each successive 15-minute interval. At least two data points must be used to calculate each 1-hour average. A minimum of 18 1-hour averages must be used to compute each 24-hour average.

(e) In lieu of complying with (b) or (c) of this section, those sources with a design capacity of less than 152 Mg/D (150 LT/D) of H_2S expressed as sulfur may calculate the sulfur emission reduction efficiency achieved for each 24-hour period by:

$$R = \frac{K_2 S}{X}$$

Where:

R = The sulfur dioxide removal efficiency achieved during the 24-hour period, percent.

K_2 = Conversion factor, 0.02400 Mg/D per kg/hr (0.01071 LT/D per lb/hr).

S = The sulfur production rate during the 24-hour period, kg/hr (lb/hr).

X = The sulfur feed rate in the acid gas, Mg/D (LT/D).

(f) The monitoring devices required in paragraphs (b)(1), (b)(3) and (c) of this section shall be calibrated at least annually according to the manufacturer's specifications, as required by § 60.13(b).

(g) The continuous emission monitoring systems required in paragraphs (b)(1), (b)(3), and (c) of this section shall be subject to the emission monitoring requirements of § 60.13 of the General Provisions. For conducting the continuous emission monitoring system performance evaluation required by § 60.13(c), Performance Specification 2 shall apply, and Method 6 shall be used for systems required by paragraph (b) of this section.

[50 FR 40160, Oct. 1, 1985, as amended at 54 FR 6680, Feb. 14, 1989; 65 FR 61774, Oct. 17, 2000]

§ 60.647 Recordkeeping and reporting requirements.

(a) Records of the calculations and measurements required in § 60.642 (a) and (b) and § 60.646 (a) through (g) must be retained for at least 2 years following the date of the measurements by owners and operators subject to this subpart. This requirement is included under § 60.7(d) of the General Provisions.

(b) Each owner or operator shall submit a written report of excess emissions to the Administrator semiannually. For the purpose of these reports, excess emissions are defined as:

(1) Any 24-hour period (at consistent intervals) during which the average sulfur emission reduction efficiency (R) is less than the minimum required efficiency (Z).

(2) For any affected facility electing to comply with the provisions of § 60.646(b)(2), any 24-hour period during which the average temperature of the gases leaving the combustion zone of an incinerator is less than the appropriate operating temperature as determined during the most recent performance test in accordance with the provisions of § 60.646(b)(2). Each 24-hour period must consist of at least 96 temperature measurements equally spaced over the 24 hours.

(c) To certify that a facility is exempt from the control requirements of

these standards, each owner or operator of a facility with a design capacity less that 2 LT/D of H_2S in the acid gas (expressed as sulfur) shall keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of H_2S expressed as sulfur.

(d) Each owner or operator who elects to comply with § 60.646(e) shall keep, for the life of the facility, a record demonstrating that the facility's design capacity is less than 150 LT/D of H_2S expressed as sulfur.

(e) The requirements of paragraph (b) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of obligation to comply with paragraph (b) of this section, provided that they comply with the requirements established by the State.

§ 60.648 Optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure.[1]

(a) When an instantaneous sample is desired and H_2S concentration is ten grains per 1000 cubic foot or more, a 100 ml Tutwiler burette is used. For concentrations less than ten grains, a 500 ml Tutwiler burette and more dilute solutions are used. In principle, this method consists of titrating hydrogen sulfide in a gas sample directly with a standard solution of iodine.

(b) *Apparatus.* (See Figure 1.) A 100 or 500 ml capacity Tutwiler burette, with two-way glass stopcock at bottom and three-way stopcock at top which connect either with inlet tubulature or glass-stoppered cylinder, 10 ml capacity, graduated in 0.1 ml subdivision; rubber tubing connecting burette with leveling bottle.

(c) *Reagents.* (1) Iodine stock solution, 0.1N. Weight 12.7 g iodine, and 20 to 25 g cp potassium iodide for each liter of solution. Dissolve KI in as little water as necessary; dissolve iodine in concentrated KI solution, make up to proper volume, and store in glass-stoppered brown glass bottle.

(2) Standard iodine solution, 1 ml=0.001771 g I. Transfer 33.7 ml of above 0.1N stock solution into a 250 ml volumetric flask; add water to mark and mix well. Then, for 100 ml sample of gas, 1 ml of standard iodine solution is equivalent to 100 grains H_2S per cubic feet of gas.

(3) Starch solution. Rub into a thin paste about one teaspoonful of wheat starch with a little water; pour into about a pint of boiling water; stir; let cool and decant off clear solution. Make fresh solution every few days.

(d) *Procedure.* Fill leveling bulb with starch solution. Raise (L), open cock (G), open (F) to (A), and close (F) when solutions starts to run out of gas inlet. Close (G). Purge gas sampling line and connect with (A). Lower (L) and open (F) and (G). When liquid level is several ml past the 100 ml mark, close (G) and (F), and disconnect sampling tube. Open (G) and bring starch solution to 100 ml mark by raising (L); then close (G). Open (F) momentarily, to bring gas in burette to atmospheric pressure, and close (F). Open (G), bring liquid level down to 10 ml mark by lowering (L). Close (G), clamp rubber tubing near (E) and disconnect it from burette. Rinse graduated cylinder with a standard iodine solution (0.00171 g I per ml); fill cylinder and record reading. Introduce successive small amounts of iodine thru (F); shake well after each addition; continue until a faint permanent blue color is obtained. Record reading; subtract from previous reading, and call difference D.

(e) With every fresh stock of starch solution perform a blank test as follows: introduce fresh starch solution into burette up to 100 ml mark. Close (F) and (G). Lower (L) and open (G). When liquid level reaches the 10 ml mark, close (G). With air in burette, titrate as during a test and up to same end point. Call ml of iodine used C. Then,

Grains H_2S per 100 cubic foot of gas=100 (D—C)

[1] Gas Engineers Handbook, Fuel Gas Engineering Practices, The Industrial Press, 93 Worth Street, New York, NY, 1966, First Edition, Second Printing, page 6/25 (Docket A–80–20–A, Entry II–I–67).

(f) Greater sensitivity can be attained if a 500 ml capacity Tutwiler burette is used with a more dilute (0.001N) iodine solution. Concentrations less than 1.0 grains per 100 cubic foot can be determined in this way. Usually, the starch-iodine end point is much less distinct, and a blank determination of end point, with H_2S-free gas or air, is required.

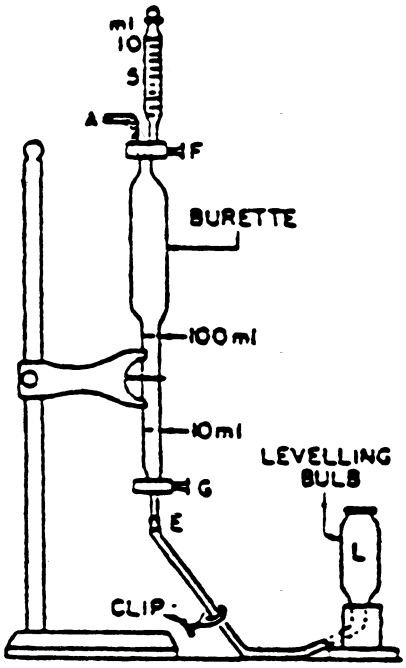


FIGURE 1. TUTWILER BURETTE (LETTERED ITEMS MENTIONED IN TEXT)

Subpart MMM [Reserved]

Subpart NNN—Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

SOURCE: 55 FR 26942, June 29, 1990, unless otherwise noted.

§ 60.660 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in § 60.667 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c).

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after December 30, 1983:

(1) Each distillation unit not discharging its vent stream into a recovery system.

(2) Each combination of a distillation unit and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more distillation units and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any distillation unit operating as part of a process unit which produces coal tar or beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(2) Any distillation unit that is subject to the provisions of subpart DDD is not an affected facility.

(3) Any distillation unit that is designed and operated as a batch operation is not an affected facility.

(4) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§ 60.662; 60.664 (d), (e), and (f); and 60.665 (h) and (l).

(5) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than one gigagram per year is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in paragraphs (j), (l)(6), and (n) of § 60.665.

(6) Each affected facility operated with a vent stream flow rate less than 0.008 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in

§ 60.664(g) and paragraphs (i), (l)(5), and (o) of § 60.665.

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§ 60.662 through 60.665 and 60.668. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(4) and (6) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

[NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.]

[55 FR 26942, June 29, 2000, as amended at 65 FR 78279, Dec. 14, 2000]

§ 60.661 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

Batch distillation operation means a noncontinuous distillation operation in which a discrete quantity or batch of liquid feed is charged into a distillation unit and distilled at one time. After the initial charging of the liquid feed, no additional liquid is added during the distillation operation.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam.

By compound means by individual stream components, not carbon equivalents.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Distillation operation means an operation separating one or more feed stream(s) into two or more exit stream(s), 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 vapor-phase as they approach equilibrium within the distillation unit.

Distillation unit means a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.), plus any associated recovery system.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a vent stream.

Halogenated vent stream means any vent stream determined to have a total

concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

Process heater means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

Process unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.667. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in § 60.667 that is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

Recovery device means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

Recovery system means an individual recovery device or series of such devices applied to the same vent stream.

Total organic compounds (TOC) means those compounds measured according to the procedures in § 60.664(b)(4). For the purposes of measuring molar composition as required in § 60.664(d)(2)(i); hourly emissions rate as required in § 60.664(d)(5) and § 60.664(e); and TOC concentration as required in § 60.665(b)(4) and § 60.665(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for State Implementation Plans (SIP) revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

TRE index value means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual distillation vent stream, based on vent stream flow rate, emission rate of TOC net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under § 60.664(e).

Vent stream means any gas stream discharged directly from a distillation facility to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks including, but not limited to, pumps, compressors, and valves.

§ 60.662 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by § 60.8 and § 60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

§ 60.663 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.662(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder

and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a 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) A flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the inlet of each incinerator and before being joined with any other vent stream.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with § 60.662(b) shall install, calibrate, maintain and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultra-violet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.662(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each distillation unit within an affected facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) heat input design capacity.

(d) Monitor and record the periods of operation of the boiler or process heater if the design heat input capacity of the boiler or process heater is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(e) The owner or operator of an affected facility that seeks to comply with the TRE index value limit specified under § 60.662(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of ±0.02 specific gravity units, each equipped with a continuous recorder, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, or

(ii) An organic monitoring device used to monitor organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of ±10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(f) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.662 with control devices other than incinerator, boiler, process heater, or flare; or recovery device other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 26942, June 29, 1990, as amended at 65 FR 61774, Oct. 17, 2000]

§ 60.664 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.662, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.662(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken.

The TOC concentration corrected to 3 percent 0_2 (C_c) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent O_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The 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 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg/hr (lb/hr).

E_o=Mass rate of TOC discharged to the atmosphere, kg/hr (lb/hr).

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2\left(\sum_{j=1}^{n} C_{ij}M_{ij}\right)Q_i$$

$$E_O = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_O$$

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, ppm 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, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/min).

K_2 = 2.494×10^{-6} (1/ppm)(g-mole/scm) (kg/g) (min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm) (lb-mole/scf) (min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components ''j'', dry basis, ppm by volume.

n=Number of components in the sample.

(c) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with § 60.662(a), the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(d) When a flare is used to seek to comply with § 60.662(b), the flare shall comply with the requirements of § 60.18.

(e) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.662(b) and for determining the process vent stream TRE index value to determine compliance under § 60.662(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in § 60.664(e)(2) and (3) shall be, except for the situations outlined in paragraph (e)(1)(ii) of this section, prior to the inlet of any control device, prior to any post-distillation dilution of the stream with air, and prior to any post-distillation introduction of halogenated compounds into the process vent stream. No transverse site selection method is needed for vents smaller than 10 centimeters (4 inches) in diameter.

(ii) If any gas stream other than the distillation vent stream from the affected facility is normally conducted through the final recovery device.

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which the nondistillation stream is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nondistillation vent stream and at the outlet of the final recovery device.

(C) This efficiency is applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of the nondistillation stream to determine the concentration of TOC in the distillation vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.664(e)(4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1\left(\sum_{j=1}^{n} C_j H_j\right)$$

where:

H_T = Net heating value of the sample, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).

K_1 = 1.74×10^{-7} (1/ppm) (g-mole/scm) (MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.03×10^{-11} (1/ppm) (lb-mole/scf) (Btu/kcal) (English units) where standard temperature for (lb/mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.664(e)(2).

H_j = Net heat of combustion of compound j, kcal/(g-mole) [kcal/(lb-mole)], based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

The heats of combustion of vent stream components would be required to be determined using ASTM D2382–76 (incorporation by reference as specified in § 60.17 of this part) if published values are not available or cannot be calculated.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2\left[\sum_{j=1}^{n} C_j M_j\right] Q_s$$

where:

E_{TOC} = Measured emission rate of TOC, kg/hr (lb/hr).

K_2 = 2.494×10^{-6} (1/ppm) (g-mole/scm) (kg/g) (min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm) (lb-mole/scf) (min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured by Method 18 as indicated in § 60.664(e)(2).

M_j = Molecular weight of sample j, g/g-mole (lb/lb-mole).

Q_s = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(f) For purposes of complying with § 60.662(c) the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}}\left[a + b\left(Q_s\right)^{0.88} + c\left(Q_s\right) + d\left(Q_s\right)\left(H_T\right) + e\left(Q_s\right)^{0.88}\left(H_T\right)^{0.88} + f\left(Y_s\right)^{0.5}\right]$$

(i) Where for a vent stream flow rate that is greater than or equal to 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q_s = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for

determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in table 1 except for Category E vent streams where $Y_s = Q_s H_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from table 1.

TABLE 1. DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 3.5 OR IF 0 ≤ NET HEATING VALUE (Btu/scf) ≤ 94:

Q_S = Vent Stream Flow rate scm/min (scf/min)	a	b	c	d	e	f
$14.2 \le Q_S \le 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$(501 \le Q_S \le 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_S \le 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$(664 < Q_S \le 24{,}700)$	(43.35694)	(0.016696)	(-0.024258)	(0)	(0)	(0.003803)
$699 < Q_S \le 1400$	39.19213	0.29062	-0.25332	0	0	0.01449
$(24{,}700 < Q_S \le 49{,}000)$	(86.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_S \le 2100$	58.71768	0.30511	-0.25332	0	0	0.01775
$(49{,}000 < Q_S \le 74{,}000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$2100 < Q_S \le 2800$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74{,}000 < Q_S \le 99{,}000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2800 < Q_S \le 3500$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99{,}000 < Q_S \le 120{,}000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008500)

DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE < 3.5 (MJ/scm) OR IF NET HEATING VALUE < 94 (Btu/scf):

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_S \leq 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$(501 \leq Q_S \leq 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_S \leq 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$(664 < Q_S \leq 24,700)$	(43.35694)	(0.016696)	(-0.024258)	(0)	(0)	(0.003803)
$699 < Q_S \leq 1400$	39.19213	0.29062	-0.25332	0	0	0.01449
$(24,700 < Q_S \leq 49,000)$	(86.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_S \leq 2100$	58.71768	0.30511	-0.25332	0	0	0.01775
$(49,000 < Q_S \leq 74,000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$2100 < Q_S \leq 2800$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74,000 < Q_S \leq 99,000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2800 < Q_S \leq 3500$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99,000 < Q_S \leq 120,000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008500)

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF $0 \leq$ NET HEATING VALUE (MJ/scm) ≤ 0.48 OR IF $0 \leq$ NET HEATING VALUE (Btu/scf) ≤ 13:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_S \leq 1340$	8.54245	0.10555	0.09030	-0.17109	0	0.01025
$(501 \leq Q_S \leq 47,300)$	(18.83268)	(0.0065901)	(0.008647)	(-0.00039762)	(0)	(0.003803)
$1340 < Q_S \leq 2690$	16.94386	0.11470	0.09030	-0.17109	0	0.01449
$(47,300 < Q_S \leq 95,000)$	(37.35443)	(0.0071614)	(0.008647)	(-0.00039762)	(0)	(0.005376)
$2690 < Q_S \leq 4040$	25.34528	0.12042	0.09030	-0.17109	0	0.01775
$(95,000 < Q_S \leq 143,000)$	(55.87620)	(0.0075185)	(0.008647)	(-0.00039762)	(0)	(0.006585)

DESIGN CATEGORY C. FOR NONHALOGENTED PROCESS VENT STREAMS, IF 0.48 < NET HEATING VALUE (MJ/scm) ≤ 1.9 OR IF 13 < NET HEATING VALUE (Btu/scf) ≤ 51:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Q_S \le 1340$	9.25233	0.06105	0.31937	-0.16181	0	0.01025
$(501 \le Q_S \le 47,300)$	(20.39769)	(0.003812)	(0.030582)	(-0.00037605)	(0)	(0.003803)
$1340 < Q_S \le 2690$	18.36363	0.06635	0.31937	-0.16181	0	0.01449
$(47,300 < Q_S \le 95,000)$	(40.48446)	(0.004143)	(0.030582)	(-0.00037605)	(0)	(0.005376)
$2690 < Q_S \le 4040$	27.47492	0.06965	0.31937	-0.16181	0	0.01775
$(95,000 < Q_S \le 143,000)$	(60.57121)	(0.004349)	(0.030582)	(-0.00037605)	(0)	(0.006585)

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6 OR IF 51 < NET HEATING VALUE (Btu/scf) ≤ 97:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Q_S \le 1180$	6.67868	0.06943	0.02582	0	0	0.01025
$(501 \le Q_S \le 41,700)$	(14.72382)	(0.004335)	(0.002472)	(0)	(0)	(0.003803)
$1180 < Q_S \le 2370$	13.21633	0.07546	0.02582	0	0	0.01449
$(41,700 < Q_S \le 83,700)$	(29.13672)	(0.004711)	(0.002472)	(0)	(0)	(0.005376)
$2370 < Q_S \le 3550$	19.75398	0.07922	0.02582	0	0	0.01775
$(83,700 < Q_S \le 125,000)$	(43.54962)	(0.004946)	(0.002472)	(0)	(0)	(0.006585)

DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE > 3.6 MJ/scm OR IF NET HEATING VALUE > 97 (Btu/scf):

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \le Y_S \le 1180$	6.67868	0	0	-0.00707	0.02220	0.01025
$(501 \le Y_S \le 41,700)$	(14.72382)	(0)	(0)	(-0.0000164)	(0.0001174)	(0.003803)
$1180 < Y_S \le 2370$	13.21633	0	0	-0.00707	0.02412	0.01449
$(41,700 < Y_S \le 83,700)$	(29.13672)	(0)	(0)	(-0.0000164)	(0.0001276)	(0.005376)
$2370 < Y_S \le 3550$	19.75398	0	0	-0.00707	0.02533	0.01775
$(83,700 < Y_S \le 125,000)$	(43.54962)	(0)	(0)	(-0.0000164)	(0.0001340)	(0.006585)

(ii) Where for a vent stream flow rate that is less than 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q_s = 14.2 scm/min (501 scf/min).

H_T = (FLOW) (HVAL)/Q_s.

Where the following inputs are used:

FLOW = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

HVAL = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in table 1 except for Category E vent streams where $Y_s = Q_s H_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients

The set of coefficients that apply to a vent stream can be obtained from table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}}\left[a(Q_s) + b(Q_s)^{0.8} + c(Q_s)(H_T) + d(E_{TOC}) + e\right]$$

where:

TRE = TRE index value.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

Q_s = Vent stream flow rate, scm/min (scf/min), at a standard temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from table 2.

TABLE 2—DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE

	a	b	c	d	e
H_T < 11.2 MJ/scm	2.25	0.288	−0.193	−0.0051	2.08
(H_T < 301 Btu/scf)	(0.140)	(0.0367)	(−0.000448)	(−0.0051)	(4.59)
H_T ≥ 11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08
(H_T ≥ 301 Btu/scf)	(0.0193)	(0.00788)	(−0.0000010)	(−0.0034)	(4.59)

(g) Each owner or operator of an affected facility seeking to comply with § 60.660(c)(4) or § 60.662(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.664 in order to determine compliance with § 60.662(a). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the initial TRE index value is greater than 8.0 and the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with §§ 60.8 and 60.664 and shall comply with §§ 60.663, 60.664 and 60.665. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(h) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with § 60.660(c)(6) shall use Method 2, 2A, 2C, or 2D as appropriate, for determination of volumetric flow rate.

[55 FR 26942, June 29, 1990, as amended at 65 FR 61774, Oct. 17, 2000]

§ 60.665 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.662 shall notify the Administrator of the specific provisions of § 60.662 (§ 60.662 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an

alternative provision of § 60.662 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.664 within 180 days.

(b) Each owner or operator 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 § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with § 60.662(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.665(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.664(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.664(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally, or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s)), and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally), or

(iv) As an alternative to § 60.665(b)(4)((i), (ii) or (iii), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) 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 § 60.663 (a) and (c) 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. Where a combustion device is used to comply with § 60.662(a), 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 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with § 60.662(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which 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 at which compliance with § 60.662(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test at which compliance with § 60.662(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with § 60.662(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr).

(4) For boilers 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 § 60.662(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up to date, readily accessible continuous records of the flow indication specified under § 60.663(a)(2), § 60.663(b)(2) and § 60.663(c)(1), as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater to comply with § 60.662(a) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler 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.)

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under § 60.663(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) 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 § 60.663(e), 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. Where an owner or operator seeks to

comply with § 60.662(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (1 1 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent greater than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(h) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.662(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or a distillation unit;

(2) Any recalculation of the TRE index value performed pursuant to § 60.664(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.664(d).

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in § 60.660(c)(6) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.008 scm/min (0.3 scf/min) and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.660(c)(5) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(k) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.660 (c)(4), (c)(5), or (c)(6) or § 60.662 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under § 60.665 (c) and (g).

(2) All periods recorded under § 60.665(d) when the vent stream is diverted from the control device or has no flow rate.

(3) All periods recorded under § 60.665(e) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.665(f) in which the pilot flame of the flare was absent.

(5) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in § 60.660(c)(6), including a measurement of the new vent stream flow rate, as recorded under § 60.665(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed with the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and E_{TOC}. The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under the low capacity exemption status in § 60.660(c)(5), the facility must begin compliance with the requirements set forth in § 60.662.

(6) Any change in equipment or process operation, as recorded under paragraph (j) of this section, that increases the design production capacity above the low capacity exemption level in § 60.660(c)(5) and the new capacity resulting from the change for the distillation process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and E_{TOC}. The performance test is subject to the requirements of § 60.8. The facility must begin compliance with the requirements set forth in § 60.660(d) or § 60.662. If the facility chooses to comply with § 60.662, the facility may qualify for an exemption in § 60.660(c)(4) or (6).

(7) Any recalculation of the TRE index value, as recorded under § 60.665(h).

(m) The requirements of § 60.665(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.665(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(5) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(6) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in § 60.664.

(p) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.662 other than as provided under § 60.663(a), (b), (c) and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 60 FR 58237, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000; 65 FR 78279, Dec. 14, 2000]

§ 60.666 Reconstruction.

For purposes of this subpart ''fixed capital cost of the new components,'' as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant

to all continuous programs of component replacement which are commenced within any 2-year period following December 30, 1983. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.667 Chemicals affected by subpart NNN.

Chemical name	CAS No.*
Acetaldehyde	75–07–0
Acetaldol	107–89–1
Acetic acid	64–19–7
Acetic anhydride	108–24–7
Acetone	67–64–1
Acetone cyanohydrin	75–86–5
Acetylene	74–86–2
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Adipic acid	124–04–9
Adiponitrile	111–69–3
Alcohols, C–11 or lower, mixtures.	
Alcohols, C–12 or higher, mixtures.	
Allyl chloride	107–05–1
Amylene	513–35–9
Amylenes, mixed.	
Aniline	62–53–3
Benzene	71–43–2
Benzenesulfonic acid	98–11–3
Benzenesulfonic acid C_{10-16}-alkyl derivatives, sodium salts	68081–81–2
Benzoic acid, tech	65–85–0
Benzyl chloride	100–44–7
Biphenyl	92–52–4
Bisphenol A	80–05–7
Brometone	76–08–4
1,3-Butadiene	106–99–0
Butadiene and butene fractions.	
n-Butane	106–97–8
1,4-Butanediol	110–63–4
Butanes, mixed.	
1-Butene	106–98–9
2-Butene	25167–67–3
Butenes, mixed.	
n-Butyl acetate	123–86–4
Butyl acrylate	141–32–2
n-Butyl alcohol	71–36–3
sec-Butyl alcohol	78–92–2
tert-Butyl alcohol	75–65–0
Butylbenzyl phthalate	85–68–7
Butylene glycol	107–88–0
tert-Butyl hydroperoxide	75–91–2
2-Butyne-1,4-diol	110–65–6
Butyraldehyde	123–72–8
Butyric anhydride	106–31–0
Caprolactam	105–60–2
Carbon disulfide	75–15–0
Carbon tetrabromide	558–13–4
Carbon tetrachloride	56–23–5
Chlorobenzene	108–90–7
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine	1912–24–9
Chloroform	67–66–3
p-Chloronitrobenzene	100–00–5
Chloroprene	126–99–8
Citric acid	77–92–9
Crotonaldehyde	4170–30–0
Crotonic acid	3724–65–0
Cumene	98–82–8
Cumene hydroperoxide	80–15–9
Cyanuric chloride	108–77–0
Cyclohexane	110–82–7
Cyclohexane, oxidized	68512–15–2
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Cyclohexanone oxime	100–64–1
Cyclohexene	110–83–8
1,3-Cyclopentadiene	542–92–7
Cyclopropane	75–19–4
Diacetone alcohol	123–42–2
Dibutanized aromatic concentrate.	
1,4-Dichlorobutene	110–57–6
3,4-Dichloro-1-butene	64037–54–3
Dichlorodifluoromethane	75–71–8
Dichlorodimethylsilane	75–78–5
Dichlorofluoromethane	75–43–4
-Dichlorohydrin	96–23–1
Diethanolamine	111–42–2
Diethylbenzene	25340–17–4
Diethylene glycol	111–46–6
Di-n-heptyl-n-nonyl undecyl phthalate	85–68–7
Di-isodecyl phthalate	26761–40–0
Diisononyl phthalate	28553–12–0
Dimethylamine	124–40–3
Dimethyl terephthalate	120–61–6
2,4-Dinitrotoluene	121–14–2
2,4-(and 2,6)-dinitrotoluene	121–14–2 606–20–2
Dioctyl phthalate	117–81–7
Dodecene	25378–22–7
Dodecylbenzene, non linear.	
Dodecylbenzenesulfonic acid	27176–87–0
Dodecylbenzenesulfonic acid, sodium salt	25155–30–0
Epichlorohydrin	106–89–8
Ethanol	64–17–5
Ethanolamine	141–43–5
Ethyl acetate	141–78–6
Ethyl acrylate	140–88–5
Ethylbenzene	100–41–4
Ethyl chloride	75–00–3
Ethyl cyanide	107–12–0
Ethylene	74–85–1
Ethylene dibromide	106–93–4
Ethylene dichloride	107–06–2
Ethylene glycol	107–21–1
Ethylene glycol monobutyl	111–76–2
Ethylene glycol monoethyl ether	110–80–5
Ethylene glycol monoethyl ether acetate	111–15–9
Ethylene glycol monomethyl ether	109–86–4
Ethylene oxide	75–21–8
2-Ethylhexanal	26266–68–2
2-Ethylhexyl alcohol	104–76–7
(2-Ethylhexyl) amine	104–75–6
Ethylmethylbenzene	25550–14–5
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547–17–8
Formaldehyde	50–00–0
Glycerol	56–81–5
n-Heptane	142–82–5
Heptenes (mixed).	
Hexadecyl chloride.	
Hexamethylene diamine	124–09–4
Hexamethylene diamine adipate	3323–53–3
Hexamethylenetetramine	100–97–0
Hexane	110–54–3
2-Hexenedinitrile	13042–02–9
3-Hexenedinitrile	1119–85–3
Hydrogen cyanide	74–90–8
Isobutane	75–28–5

Chemical name	CAS No.*
Isobutanol	78–83–1
Isobutylene	115–11–7
Isobutyraldehyde	78–84–2
Isodecyl alcohol	25339–17–7
Isooctyl alcohol	26952–21–6
Isopentane	78–78–4
Isophthalic acid	121–91–5
Isoprene	78–79–5
Isopropanol	67–63–0
Ketene	463–51–4
Linear alcohols, ethoxylated, mixed.	
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed.	
Linear alcohols, sulfated, sodium salt, mixed.	
Linear alkylbenzene	123–01–3
Magnesium acetate	142–72–3
Maleic anhydride	108–31–6
Melamine	108–78–1
Mesityl oxide	141–79–7
Methacrylonitrile	126–98–7
Methanol	67–56–1
Methylamine	74–89–5
ar-Methylbenzenediamine	25376–45–8
Methyl chloride	74–87–3
Methylene chloride	75–09–2
Methyl ethyl ketone	78–93–3
Methyl iodide	74–88–4
Methyl isobutyl ketone	108–10–1
Methyl methacrylate	80–62–6
2-Methylpentane	107–83–5
1-Methyl-2-pyrrolidone	872–50–4
Methyl tert-butyl ether.	
Naphthalene	91–20–3
Nitrobenzene	98–95–3
1-Nonene	27215–95–8
Nonyl alcohol	143–08–8
Nonylphenol	25154–52–3
Nonylphenol, ethoxylated	9016–45–9
Octene	25377–83–7
Oil-soluble petroleum sulfonate, calcium salt.	
Oil-soluble petroleum sulfonate, sodium salt.	
Pentaerythritol	115–77–5
n-Pentane	109–66–0
3-Pentenenitrile	4635–87–4
Pentenes, mixed	109–67–1
Perchloroethylene	127–18–4
Phenol	108–95–2
1-Phenylethyl hydroperoxide	3071–32–7
Phenylpropane	103–65–1
Phosgene	75–44–5
Phthalic anhydride	85–44–9
Propane	74–98–6
Propionaldehyde	123–38–6
Propionic acid	79–09–4
Propyl alcohol	71–23–8
Propylene	115–07–1
Propylene chlorohydrin	78–89–7
Propylene glycol	57–55–6
Propylene oxide	75–56–9
Sodium cyanide	143–33–9
Sorbitol	50–70–4
Styrene	100–42–5
Terephthalic acid	100–21–0
1,1,2,2-Tetrachloroethane	79–34–5
Tetraethyl lead	78–00–2
Tetrahydrofuran	109–99–9
Tetra (methyl-ethyl) lead.	
Tetramethyl lead	75–74–1
Toluene	108–88–3
Toluene-2,4-diamine	95–80–7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471–62–5
Tribromomethane	75–25–2
1,1,1-Trichloroethane	71–55–6
1,1,2-Trichloroethane	79–00–5
Trichloroethylene	79–01–6
Trichlorofluoromethane	75–69–4
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1
Triethanolamine	102–71–6
Triethylene glycol	112–27–6
Vinyl acetate	108–05–4
Vinyl chloride	75–01–4
Vinylidene chloride	75–35–4
m-Xylene	108–38–3
o-Xylene	95–47–6
p-Xylene	106–42–3
Xylenes (mixed)	1330–20–7
m-Xylenol	576–26–1

*CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[55 FR 26942, June 29, 1990, as amended at 60 FR 58237, 58238, Nov. 27, 1995]

§ 60.668 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under § 111(c) 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: § 60.663(e).

Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

SOURCE: 74 FR 19309, Apr. 28, 2009, unless otherwise noted.

§ 60.670 Applicability and designation of affected facility.

(a)(1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.

(2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in § 60.671).

(b) An affected facility that is subject to the provisions of subparts F or I of this part or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.

(c) Facilities at the following plants are not subject to the provisions of this subpart:

(1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 23 megagrams per hour (25 tons per hour) or less;

(2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 136 megagrams per hour (150 tons per hour) or less; and

(3) Common clay plants and pumice plants with capacities, as defined in § 60.671, of 9 megagrams per hour (10 tons per hour) or less.

(d)(1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in § 60.671, having the same function as the existing facility, and there is no increase in the amount of emissions, the new facility is exempt from the provisions of §§ 60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.

(2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in § 60.676(a).

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§ 60.672, 60.674 and 60.675.

(e) An affected facility under paragraph (a) of this section that commences construction, modification, or reconstruction after August 31, 1983, is subject to the requirements of this part.

(f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that do not apply to owners and operators of affected facilities subject to this subpart or that apply with certain exceptions.

§ 60.671 Definitions.

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

Bagging operation means the mechanical process by which bags are filled with nonmetallic minerals.

Belt conveyor means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

Bucket elevator means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

Building means any frame structure with a roof.

Capacity means the cumulative rated capacity of all initial crushers that are part of the plant.

Capture system means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more affected facilities to a control device.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities at a nonmetallic mineral processing plant.

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

Crush or *Crushing* means to reduce the size of nonmetallic mineral material by means of physical impaction of the crusher or grinding mill upon the material.

Crusher means a machine used to crush any nonmetallic minerals, and

includes, but is not limited to, the following types: Jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

Enclosed truck or railcar loading station means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

Fixed plant means any nonmetallic mineral processing plant at which the processing equipment specified in § 60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

Fugitive emission means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

Grinding mill means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: Hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

Initial crusher means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals:

(1) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(2) Sand and Gravel.

(3) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(4) Rock Salt.

(5) Gypsum (natural or synthetic).

(6) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(7) Pumice.

(8) Gilsonite.

(9) Talc and Pyrophyllite.

(10) Boron, including Borax, Kernite, and Colemanite.

(11) Barite.

(12) Fluorospar.

(13) Feldspar.

(14) Diatomite.

(15) Perlite.

(16) Vermiculite.

(17) Mica.

(18) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in § 60.670 (b) and (c).

Portable plant means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

Production line means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

Saturated material means, for purposes of this subpart, mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators and belt conveyors. Material that is wetted solely by wet suppression systems is not considered to be ''saturated'' for purposes of this definition.

Screening operation means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens). Grizzly feeders associated with truck dumping and static (non-moving) grizzlies used anywhere in the nonmetallic mineral processing plant are not considered to be screening operations.

Seasonal shut down means shut down of an affected facility for a period of at least 45 consecutive days due to weather or seasonal market conditions.

Size means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

Stack emission means the particulate matter that is released to the atmosphere from a capture system.

Storage bin means a facility for storage (including surge bins) of nonmetallic minerals prior to further processing or loading.

Transfer point means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

Truck dumping means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: Trucks, front end loaders, skip hoists, and railcars.

Vent means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

Wet material processing operation(s) means any of the following:

(1) Wet screening operations (as defined in this section) and subsequent screening operations, bucket elevators and belt conveyors in the production line that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line; or

(2) Screening operations, bucket elevators and belt conveyors in the production line downstream of wet mining operations (as defined in this section) that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line.

Wet mining operation means a mining or dredging operation designed and operated to extract any nonmetallic mineral regulated under this subpart from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.

Wet screening operation means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

§ 60.672 Standard for particulate matter (PM).

(a) Affected facilities must meet the stack emission limits and compliance requirements in Table 2 of this subpart within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.8. The requirements in Table 2 of this subpart apply for affected facilities with capture systems used to capture and transport particulate matter to a control device.

(b) Affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 of this subpart within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11. The requirements in Table 3 of this subpart apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems.

(c) [Reserved]

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

(e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a) and (b) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) Fugitive emissions from the building openings (except for vents as defined in § 60.671) must not exceed 7 percent opacity; and

(2) Vents (as defined in § 60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 of this subpart.

(f) Any baghouse that controls emissions from only an individual, enclosed storage bin is exempt from the applicable stack PM concentration limit (and associated performance testing) in Table 2 of this subpart but must meet the applicable stack opacity limit and compliance requirements in Table 2 of this subpart. This exemption from the stack PM concentration limit does not apply for multiple storage bins with combined stack emissions.

§ 60.673 Reconstruction.

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital cost that would be required to construct a comparable new facility'' under § 60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.

(b) Under § 60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

§ 60.674 Monitoring of operations.

(a) The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

(1) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals ±1 inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(2) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under § 60.676(b).

(1) If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Table 3 of this subpart provided that the affected facility meets the criteria in paragraphs (b)(1)(i) and (ii) of this section:

(i) The owner or operator of the affected facility conducts periodic inspections of the upstream water spray(s) that are responsible for controlling fugitive emissions from the affected facility. These inspections are conducted according to paragraph (b) of this section and § 60.676(b), and

(ii) The owner or operator of the affected facility designates which upstream water spray(s) will be periodically inspected at the time of the initial performance test required under § 60.11 of this part and § 60.675 of this subpart.

(2) If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than

water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry required under § 60.676(b) must specify the control mechanism being used instead of the water sprays.

(c) Except as specified in paragraph (d) or (e) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, Appendix A–7). The Method 22 (40 CFR part 60, Appendix A–7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The owner or operator must record each Method 22 (40 CFR part 60, Appendix A–7) test, including the date and any corrective actions taken, in the logbook required under § 60.676(b). The owner or operator of the affected facility may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to § 60.675(b) simultaneously with a Method 22 (40 CFR part 60, Appendix A–7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Table 2 of this subpart. The revised visible emissions success level must be incorporated into the permit for the affected facility.

(d) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A–7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions may use a bag leak detection system. The owner or operator must install, operate, and maintain the bag leak detection system according to paragraphs (d)(1) through (3) of this section.

(1) Each bag leak detection system must meet the specifications and requirements in paragraphs (d)(1)(i) through (viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.

(ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (*e.g.*, using a strip chart recorder or a data logger).

(iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (d)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

(v) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (d)(1)(vi) of this section.

(vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (d)(2) of this section.

(vii) The owner or operator must install the bag leak detection sensor downstream of the fabric filter.

(viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(2) The owner or operator of the affected facility must develop and submit to the Administrator or delegated authority for approval of a site-specific monitoring plan for each bag leak detection system. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (d)(2)(i) through (vi) of this section.

(i) Installation of the bag leak detection system;

(ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(iii) Operation of the bag leak detection system, including quality assurance procedures;

(iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(v) How the bag leak detection system output will be recorded and stored; and

(vi) Corrective action procedures as specified in paragraph (d)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

(3) For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (d)(2)(vi) of this section, the owner or operator must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM 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 fabric filter compartment;

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or

(vi) Shutting down the process producing the PM emissions.

(e) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A–7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility that is subject to the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) may follow the continuous compliance requirements in row 1 items (i) through (iii) of Table 6 to Subpart AAAAA of 40 CFR part 63.

§ 60.675 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendices A–1 through A–7 of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the PM standards in § 60.672(a) as follows:

(1) Except as specified in paragraphs (e)(3) and (4) of this section, Method 5 of Appendix A–3 of this part or Method 17 of Appendix A–6 of this part shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, Appendix A–3), if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a

temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.

(2) Method 9 of Appendix A–4 of this part and the procedures in § 60.11 shall be used to determine opacity.

(c)(1) In determining compliance with the particulate matter standards in § 60.672(b) or § 60.672(e)(1), the owner or operator shall use Method 9 of Appendix A–4 of this part and the procedures in § 60.11, with the following additions:

(i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (*e.g.*, road dust). The required observer position relative to the sun (Method 9 of Appendix A–4 of this part, Section 2.1) must be followed.

(iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(2)(i) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under § 60.672(f) of this subpart, using Method 9 (40 CFR part 60, Appendix A–4), the duration of the Method 9 (40 CFR part 60, Appendix A–4) observations shall be 1 hour (ten 6-minute averages).

(ii) The duration of the Method 9 (40 CFR part 60, Appendix A–4) observations may be reduced to the duration the affected facility operates (but not less than 30 minutes) for baghouses that control storage bins or enclosed truck or railcar loading stations that operate for less than 1 hour at a time.

(3) When determining compliance with the fugitive emissions standard for any affected facility described under § 60.672(b) or § 60.672(e)(1) of this subpart, the duration of the Method 9 (40 CFR part 60, Appendix A–4) observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits in Table 3 of this subpart must be based on the average of the five 6-minute averages.

(d) To demonstrate compliance with the fugitive emission limits for buildings specified in § 60.672(e)(1), the owner or operator must complete the testing specified in paragraph (d)(1) and (2) of this section. Performance tests must be conducted while all affected facilities inside the building are operating.

(1) If the building encloses any affected facility that commences construction, modification, or reconstruction on or after April 22, 2008, the owner or operator of the affected facility must conduct an initial Method 9 (40 CFR part 60, Appendix A–4) performance test according to this section and § 60.11.

(2) If the building encloses only affected facilities that commenced construction, modification, or reconstruction before April 22, 2008, and the owner or operator has previously conducted an initial Method 22 (40 CFR part 60, Appendix A–7) performance test showing zero visible emissions, then the owner or operator has demonstrated compliance with the opacity limit in § 60.672(e)(1). If the owner or operator has not conducted an initial performance test for the building before April 22, 2008, then the owner or operator must conduct an initial Method 9 (40 CFR part 60, Appendix A–4) performance test according to this section and § 60.11 to show compliance with the opacity limit in § 60.672(e)(1).

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(2) A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met:

(i) No more than three emission points may be read concurrently.

(ii) All three emission points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(iii) If an opacity reading for any one of the three emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

(3) Method 5I of Appendix A–3 of this part may be used to determine the PM concentration as an alternative to the methods specified in paragraph (b)(1) of this section. Method 5I (40 CFR part 60, Appendix A–3) may be useful for affected facilities that operate for less than 1 hour at a time such as (but not limited to) storage bins or enclosed truck or railcar loading stations.

(4) In some cases, velocities of exhaust gases from building vents may be too low to measure accurately with the type S pitot tube specified in EPA Method 2 of Appendix A–1 of this part [*i.e.*, velocity head <1.3 mm H_2O (0.05 in. H_2O)] and referred to in EPA Method 5 of Appendix A–3 of this part. For these conditions, the owner or operator may determine the average gas flow rate produced by the power fans (*e.g.*, from vendor-supplied fan curves) to the building vent. The owner or operator may calculate the average gas velocity at the building vent measurement site using Equation 1 of this section and use this average velocity in determining and maintaining isokinetic sampling rates.

$$v_e = \frac{Q_f}{A_e} \qquad \text{(Eq. 1)}$$

Where:

V_e = average building vent velocity (feet per minute);

Q_f = average fan flow rate (cubic feet per minute); and

A_e = area of building vent and measurement location (square feet).

(f) To comply with § 60.676(d), the owner or operator shall record the measurements as required in § 60.676(c) using the monitoring devices in § 60.674 (a)(1) and (2) during each particulate matter run and shall determine the averages.

(g) For performance tests involving only Method 9 (40 CFR part 60 Appendix A–4) testing, the owner or operator may reduce the 30-day advance notification of performance test in § 60.7(a)(6) and 60.8(d) to a 7-day advance notification.

(h) [Reserved]

(i) If the initial performance test date for an affected facility falls during a seasonal shut down (as defined in § 60.671 of this subpart) of the affected facility, then with approval from the permitting authority, the owner or operator may postpone the initial performance test until no later than 60 calendar days after resuming operation of the affected facility.

§ 60.676 Reporting and recordkeeping.

(a) Each owner or operator seeking to comply with § 60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.

(1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

(i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and

(ii) The rated capacity in tons per hour of the replacement equipment.

(2) For a screening operation:

(i) The total surface area of the top screen of the existing screening operation being replaced and

(ii) The total surface area of the top screen of the replacement screening operation.

(3) For a conveyor belt:

(i) The width of the existing belt being replaced and

(ii) The width of the replacement conveyor belt.

(4) For a storage bin:

(i) The rated capacity in megagrams or tons of the existing storage bin being replaced and

(ii) The rated capacity in megagrams or tons of replacement storage bins.

(b)(1) Owners or operators of affected facilities (as defined in §§ 60.670 and 60.671) for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under § 60.674(b) or (c), including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request.

(2) For each bag leak detection system installed and operated according to § 60.674(d), the owner or operator must keep the records specified in paragraphs (b)(2)(i) through (iii) of this section.

(i) Records of the bag leak detection system output;

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and

(iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.

(3) The owner or operator of each affected facility demonstrating compliance according to § 60.674(e) by following the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) must maintain records of visible emissions observations required by § 63.7132(a)(3) and (b) of 40 CFR part 63, subpart AAAAA.

(c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss and liquid flow rate decrease by more than 30 percent from the average determined during the most recent performance test.

(e) The reports required under paragraph (d) of this section shall be postmarked within 30 days following end of the second and fourth calendar quarters.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in § 60.672 of this subpart, including reports of opacity observations made using Method 9 (40 CFR part 60, Appendix A–4) to demonstrate compliance with § 60.672(b), (e) and (f).

(g) The owner or operator of any wet material processing operation that processes saturated and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. At the time of such change, this screening operation, bucket elevator, or belt conveyor becomes subject to the applicable opacity limit in § 60.672(b) and the emission test requirements of § 60.11.

(h) The subpart A requirement under § 60.7(a)(1) for notification of the date construction or reconstruction commenced is waived for affected facilities under this subpart.

(i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.

(1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

(2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.

(j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

(k) Notifications and reports required under this subpart and under subpart A of this part to demonstrate compliance with this subpart need only to be sent to the EPA Region or the State which has been delegated authority according to § 60.4(b).

TABLE 1 TO SUBPART OOO OF PART 60—EXCEPTIONS TO APPLICABILITY OF SUBPART A TO SUBPART OOO

Subpart A reference	Applies to subpart OOO	Explanation
60.4, Address	Yes	Except in § 60.4(a) and (b) submittals need not be submitted to both the EPA Region and delegated State authority (§ 60.676(k)).
60.7, Notification and recordkeeping	Yes	Except in (a)(1) notification of the date construction or reconstruction commenced (§ 60.676(h)). Also, except in (a)(6) performance tests involving only Method 9 (40 CFR part 60, Appendix A–4) require a 7-day advance notification instead of 30 days (§ 60.675(g)).
60.8, Performance tests	Yes	Except in (d) performance tests involving only Method 9 (40 CFR part 60, Appendix A–4) require a 7-day advance notification instead of 30 days (§ 60.675(g)).
60.11, Compliance with standards and maintenance requirements.	Yes	Except in (b) under certain conditions (§§ 60.675(c)), Method 9 (40 CFR part 60, Appendix A–4) observation is reduced from 3 hours to 30 minutes for fugitive emissions.
60.18, General control device	No	Flares will not be used to comply with the emission limits.

TABLE 2 TO SUBPART OOO OF PART 60—STACK EMISSION LIMITS FOR AFFECTED FACILITIES WITH CAPTURE SYSTEMS

For * * *	The owner or operator must meet a PM limit of * * *	And the owner or operator must meet an opacity limit of * * *	The owner or operator must demonstrate compliance with these limits by conducting * * *
Affected facilities (as defined in §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008.	0.05 g/dscm (0.022 gr/dscf) [a]	7 percent for dry control devices [b].	An initial performance test according to § 60.8 of this part and § 60.675 of this subpart; and Monitoring of wet scrubber parameters according to § 60.674(a) and § 60.676(c), (d), and (e).
Affected facilities (as defined in §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008.	0.032 g/dscm (0.014 gr/dscf) [a]	Not applicable (except for individual enclosed storage bins). 7 percent for dry control devices on individual enclosed storage bins.	An initial performance test according to § 60.8 of this part and § 60.675 of this subpart; and Monitoring of wet scrubber parameters according to § 60.674(a) and § 60.676(c), (d), and (e); and Monitoring of baghouses according to § 60.674(c), (d), or (e) and § 60.676(b).

[a] Exceptions to the PM limit apply for individual enclosed storage bins and other equipment. See § 60.672(d) through (f).
[b] The stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.

TABLE 3 TO SUBPART OOO OF PART 60—FUGITIVE EMISSION LIMITS

For * * *	The owner or operator must meet the following fugitive emissions limit for grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility (as defined in §§ 60.670 and 60.671) * * *	The owner or operator must meet the following fugitive emissions limit for crushers at which a capture system is not used * * *	The owner or operator must demonstrate compliance with these limits by conducting * * *
Affected facilities (as defined in §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008.	10 percent opacity	15 percent opacity	An initial performance test according to § 60.11 of this part and § 60.675 of this subpart.
Affected facilities (as defined in §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008.	7 percent opacity	12 percent opacity	An initial performance test according to § 60.11 of this part and § 60.675 of this subpart; and Periodic inspections of water sprays according to § 60.674(b) and § 60.676(b); and A repeat performance test according to § 60.11 of this part and § 60.675 of this subpart within 5 years from the previous performance test for fugitive emissions from affected facilities without water sprays. Affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in § 60.674(b) and § 60.676(b) are exempt from this 5-year repeat testing requirement.

Subpart PPP—Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants

SOURCE: 50 FR 7699, Feb. 25, 1985, unless otherwise noted.

§ 60.680 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each rotary spin wool fiberglass insulation manufacturing line.

(b) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after February 7, 1984, is subject to the requirements of this subpart.

§ 60.681 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Glass pull rate means the mass of molten glass utilized in the manufacture of wool fiberglass insulation at a single manufacturing line in a specified time period.

Manufacturing line means the manufacturing equipment comprising the forming section, where molten glass is fiberized and a fiberglass mat is formed; the curing section, where the binder resin in the mat is thermally ''set;'' and the cooling section, where the mat is cooled.

Rotary spin means a process used to produce wool fiberglass insulation by forcing molten glass through numerous

small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high velocity air flow.

Wool fiberglass insulation means a thermal insulation material composed of glass fibers and made from glass produced or melted at the same facility where the manufacturing line is located.

§ 60.682 Standard for particulate matter.

On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 5.5 kg/Mg (11.0 1b/ton) of glass pulled.

§ 60.683 Monitoring of operations.

(a) An owner or operator subject to the provisions of this subpart who uses a wet scrubbing control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the gas pressure drop across each scrubber and the scrubbing liquid flow rate to each scrubber. The pressure drop monitor is to be certified by its manufacturer to be accurate within ±250 pascals (±1 inch water gauge) over its operating range, and the flow rate monitor is to be certified by its manufacturer to be accurate within ±5 percent over its operating range.

(b) An owner or operator subject to the provisions of this subpart who uses a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate. In addition, the owner or operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, ''Total Residue Dried at 103–105 °C,'' in *Standard Methods for the Examination of Water and Wastewater*, 15th Edition, 1980 (incorporated by reference—see § 60.17). Total residue shall be reported as percent by weight. All monitoring devices required under this paragraph are to be certified by their manufacturers to be accurate within ±5 percent over their operating range.

(c) All monitoring devices required under this section are to be recalibrated quarterly in accordance with procedures under § 60.13(b).

§ 60.684 Recordkeeping and reporting requirements.

(a) At 30-minute intervals during each 2-hour test run of each performance test of a wet scrubber control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(a).

(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.

(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in § 60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.

(e) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities

within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

§ 60.685 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in § 60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(C_t\ Q_{sd})/(P_{avg}\ K)$$

where:

E = emission rate of particulate matter, kg/Mg (lb/ton).
C_t = concentration of particulate matter, g/dscm (gr/dscf).
Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P_{avg} = average glass pull rate, Mg/hr (ton/hr).
K = 1,000 g/kg (7,000 gr/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_t) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90.1 dscf).

(3) The average glass pull rate (P_{avg}) for the manufacturing line shall be the arithmetic average of three glass pull rate (P_i) determinations taken at intervals of at least 30 minutes during each run.

The individual glass pull rates (P_i) shall be computed using the following equation:

$$P_i=K'\ L_s\ W_m\ M\ [1.0-(LOI/100)]$$

where:

P_i=glass pull rate at interval ''i'', Mg/hr (ton/hr).
L_s=line speed, m/min (ft/min).
W_m=trimmed mat width, m (ft).
M=mat gram weight, g/m^2 (lb/ft^2).
LOI=loss on ignition, weight percent.
K′=conversion factor, 6×10^{-5} (min-Mg)/(hr-g) [3×10^{-2} (min-ton)/(hr-lb)].

(i) ASTM D2584–68 (Reapproved 1985) or 94 (incorporated by reference—see § 60.17), shall be used to determine the LOI for each run.

(ii) Line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.

(d) To comply with § 60.684(d), the owner or operator shall record measurements as required in § 60.684 (a) and (b) using the monitoring devices in § 60.683 (a) and (b) during the particulate matter runs.

[54 FR 6680, Feb. 14, 1989, as amended at 65 FR 61778, Oct. 17, 2000]

Subpart QQQ—Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

SOURCE: 53 FR 47623, Nov. 23, 1988, unless otherwise noted.

§ 60.690 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987.

(2) An individual drain system is a separate affected facility.

(3) An oil-water separator is a separate affected facility.

(4) An aggregate facility is a separate affected facility.

(b) Notwithstanding the provisions of 40 CFR 60.14(e)(2), the construction or installation of a new individual drain system shall constitute a modification to an affected facility described in § 60.690(a)(4). For purposes of this paragraph, a new individual drain system shall be limited to all process drains and the first common junction box.

§ 60.691 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of 40 CFR part 60, and the following terms shall have the specific meanings given them.

Active service means that a drain is receiving refinery wastewater from a process unit that will continuously maintain a water seal.

Aggregate facility means an individual drain system together with ancillary downstream sewer lines and oil-water separators, down to and including the secondary oil-water separator, as applicable.

Catch basin means an open basin which serves as a single collection point for stormwater runoff received directly from refinery surfaces and for refinery wastewater from process drains.

Closed vent system means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission source to a control device. If gas or vapor from regulated equipment are 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 the closed vent system standards.

Completely closed drain system means an individual drain system that is not open to the atmosphere and is equipped and operated with a closed vent system and control device complying with the requirements of § 60.692–5.

Control device means an enclosed combustion device, vapor recovery system or flare.

Fixed roof means a cover that is mounted to a tank or chamber in a stationary manner and which does not move with fluctuations in wastewater levels.

Floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface.

Gas-tight means operated with no detectable emissions.

Individual drain system means all process drains connected to the first common downstream junction box. The term includes all such drains and common junction box, together with their associated sewer lines and other junction boxes, down to the receiving oil-water separator.

Junction box means a manhole or access point to a wastewater sewer system line.

No detectable emissions means less than 500 ppm above background levels, as measured by a detection instrument in accordance with Method 21 in appendix A of 40 CFR part 60.

Non-contact cooling water system means a once-through drain, collection and treatment system designed and operated for collecting cooling water which does not come into contact with hydrocarbons or oily wastewater and which is not recirculated through a cooling tower.

Oil-water separator means wastewater treatment equipment used to separate oil from water consisting of a separation tank, which also includes the forebay and other separator basins, skimmers, weirs, grit chambers, and sludge hoppers. Slop oil facilities, including tanks, are included in this term along with storage vessels and auxiliary equipment located between individual drain systems and the oil-water separator. This term does not include storage vessels or auxiliary equipment which do not come in contact with or store oily wastewater.

Oily wastewater means wastewater generated during the refinery process which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

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 of petroleum, cracking, or reforming unfinished petroleum derivatives.

Sewer line means a lateral, trunk line, branch line, ditch, channel, or other conduit used to convey refinery wastewater to downstream components of a refinery wastewater treatment system. This term does not include buried, below-grade sewer lines.

Slop oil means the floating oil and solids that accumulate on the surface of an oil-water separator.

Storage vessel means any tank, reservoir, or container used for the storage of petroleum liquids, including oily wastewater.

Stormwater sewer system means a drain and collection system designed and operated for the sole purpose of collecting stormwater and which is segregated from the process wastewater collection system.

Wastewater system means any component, piece of equipment, or installation that receives, treats, or processes oily wastewater from petroleum refinery process units.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water that has a design capability to create a water barrier between the sewer and the atmosphere.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995]

§ 60.692–1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.692–1 to 60.692–5 and with §§ 60.693–1 and 60.693–2, except during periods of startup, shutdown, or malfunction.

(b) Compliance with §§ 60.692–1 to 60.692–5 and with §§ 60.693–1 and 60.693–2 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.696.

(c) Permission to use alternative means of emission limitation to meet the requirements of §§ 60.692–2 through 60.692–4 may be granted as provided in § 60.694.

(d)(1) Stormwater sewer systems are not subject to the requirements of this subpart.

(2) Ancillary equipment, which is physically separate from the wastewater system and does not come in contact with or store oily wastewater, is not subject to the requirements of this subpart.

(3) Non-contact cooling water systems are not subject to the requirements of this subpart.

(4) An owner or operator shall demonstrate compliance with the exclusions in paragraphs (d)(1), (2), and (3) of this section as provided in § 60.697 (h), (i), and (j).

§ 60.692–2 Standards: Individual drain systems.

(a)(1) Each drain shall be equipped with water seal controls.

(2) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

(3) Except as provided in paragraph (a)(4) of this section, each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions.

(4) As an alternative to the requirements in paragraph (a)(3) of this section, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed.

(5) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in § 60.692–6.

(b)(1) Junction boxes shall be equipped with a cover and may have an open 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.

(2) 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.

(3) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(4) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in § 60.692–6.

(c)(1) Sewer lines 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.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692–6.

(d) Except as provided in paragraph (e) of this section, each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section.

(e) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin.

§ 60.692–3 Standards: Oil-water separators.

(a) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart shall be equipped and operated with a fixed roof, which meets the following specifications, except as provided in paragraph (d) of this section or in § 60.693–2.

(1) The fixed roof shall be installed to completely cover the separator tank, slop oil tank, storage vessel, or other auxiliary equipment with no separation between the roof and the wall.

(2) The vapor space under a fixed roof shall not be purged unless the vapor is directed to a control device.

(3) If the roof has access doors or openings, such doors or openings shall be gasketed, latched, and kept closed at all times during operation of the separator system, except during inspection and maintenance.

(4) Roof seals, access doors, and other openings shall be checked by visual inspection initially and semiannually thereafter to ensure that no cracks or gaps occur between the roof and wall and that access doors and other openings are closed and gasketed properly.

(5) 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 it is identified, except as provided in § 60.692–6.

(b) Each oil-water separator tank or auxiliary equipment with a design capacity to treat more than 16 liters per second (250 gallons per minute (gpm)) of refinery wastewater shall, in addition to the requirements in paragraph (a) of this section, be equipped and operated with a closed vent system and control device, which meet the requirements of § 60.692–5, except as provided in paragraph (c) of this section or in § 60.693–2.

(c)(1) Each modified or reconstructed oil-water separator tank with a maximum design capacity to treat less than 38 liters per second (600 gpm) of refinery wastewater which was equipped and operated with a fixed roof covering the entire separator tank or a portion of the separator tank prior to May 4, 1987 shall be exempt from the requirements of paragraph (b) of this section, but shall meet the requirements of paragraph (a) of this section, or may elect to comply with paragraph (c)(2) of this section.

(2) The owner or operator may elect to comply with the requirements of paragraph (a) of this section for the existing fixed roof covering a portion of the separator tank and comply with the requirements for floating roofs in § 60.693–2 for the remainder of the separator tank.

(d) Storage vessels, including slop oil tanks and other auxiliary tanks that are subject to the standards in §§ 60.112, 60.112a, and 60.112b and associated requirements, 40 CFR part 60, subparts K, Ka, or Kb are not subject to the requirements of this section.

(e) Slop oil from an oil-water separator tank and oily wastewater from slop oil handling equipment shall be collected, stored, transported, recycled, reused, or disposed of in an enclosed system. Once slop oil is returned to the process unit or is disposed of, it is no longer within the scope of this subpart. Equipment used in handling slop oil shall be equipped with a fixed roof meeting the requirements of paragraph (a) of this section.

(f) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment that is required to comply with paragraph (a) of this section, and not paragraph (b) of this section, may be equipped with a pressure control valve as necessary for proper system operation. The pressure control valve shall be set at the maximum pressure necessary for proper system operation, but such that the value will not vent continuously.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.692–4 Standards: Aggregate facility.

A new, modified, or reconstructed aggregate facility shall comply with the requirements of §§ 60.692–2 and 60.692–3.

§ 60.692–5 Standards: Closed vent systems and control devices.

(a) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C (1,500 °F).

(b) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater.

(c) Flares used to comply with this subpart shall comply with the requirements of 40 CFR 60.18.

(d) 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.

(e)(1) Closed vent systems shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined during the initial and semiannual inspections by the methods specified in § 60.696.

(2) Closed vent systems shall be purged to direct vapor to the control device.

(3) A flow indicator shall be installed on a vent stream to a control device to ensure that the vapors are being routed to the device.

(4) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(5) When emissions from a closed system are detected, first efforts at repair to eliminate the emissions shall be made as soon as practicable, but not later than 30 calendar days from the date the emissions are detected, except as provided in § 60.692–6.

§ 60.692–6 Standards: Delay of repair.

(a) Delay of repair of facilities that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial refinery or process unit shutdown.

(b) Repair of such equipment shall occur before the end of the next refinery or process unit shutdown.

§ 60.692–7 Standards: Delay of compliance.

(a) Delay of compliance of modified individual drain systems with ancillary downstream treatment components will be allowed if compliance with the provisions of this subpart cannot be achieved without a refinery or process unit shutdown.

(b) Installation of equipment necessary to comply with the provisions of this subpart shall occur no later than the next scheduled refinery or process unit shutdown.

§ 60.693–1 Alternative standards for individual drain systems.

(a) An owner or operator may elect to construct and operate a completely closed drain system.

(b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device complying with the requirements of § 60.692–5.

(c) An owner or operator must notify the Administrator in the report required in 40 CFR 60.7 that the owner or operator has elected to construct and operate a completely closed drain system.

(d) If an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of § 60.692–2 or § 60.694.

(e)(1) Sewer lines 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.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692–6.

§ 60.693–2 Alternative standards for oil-water separators.

(a) An owner or operator may elect to construct and operate a floating roof on an oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart which meets the following specifications.

(1) Each floating roof shall be equipped with a closure device between the wall of the separator and the roof edge. The closure device is to consist of a primary seal and a secondary seal.

(i) The primary seal shall be a liquid-mounted seal or a mechanical shoe seal.

(A) A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the separator and the floating roof. A mechanical shoe seal means a metal sheet held vertically against the wall of the separator 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.

(B) The gap width between the primary seal and the separator wall shall not exceed 3.8 cm (1.5 in.) at any point.

(C) The total gap area between the primary seal and the separator wall shall not exceed 67 cm^2/m (3.2 $in.^2/ft$) of separator wall perimeter.

(ii) The secondary seal shall be above the primary seal and cover the annular space between the floating roof and the wall of the separator.

(A) The gap width between the secondary seal and the separator wall shall not exceed 1.3 cm (0.5 in.) at any point.

(B) The total gap area between the secondary seal and the separator wall shall not exceed 6.7 cm^2/m (0.32 $in.^2/ft$) of separator wall perimeter.

(iii) The maximum gap width and total gap area shall be determined by the methods and procedures specified in § 60.696(d).

(A) Measurement of primary seal gaps shall be performed within 60 calendar days after initial installation of the floating roof and introduction of refinery wastewater and once every 5 years thereafter.

(B) Measurement of secondary seal gaps shall be performed within 60 calendar days of initial introduction of refinery wastewater and once every year thereafter.

(iv) The owner or operator shall make necessary repairs within 30 calendar days of identification of seals not meeting the requirements listed in paragraphs (a)(1) (i) and (ii) of this section.

(2) Except as provided in paragraph (a)(4) of this section, each opening in the roof shall be equipped with a gasketed cover, seal, or lid, which shall be maintained in a closed position at all times, except during inspection and maintenance.

(3) The roof shall be floating on the liquid (i.e., off the roof supports) at all times except during abnormal conditions (i.e., low flow rate).

(4) The floating roof may be equipped with one or more emergency roof drains for removal of stormwater. Each emergency roof drain shall be fitted with a slotted membrane fabric cover that covers at least 90 percent of the drain opening area or a flexible fabric sleeve seal.

(5)(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions.

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as

practicable, but not later than 30 calendar days after it is identified, except as provided in § 60.692–6.

(b) An owner or operator must notify the Administrator in the report required by 40 CFR 60.7 that the owner or operator has elected to construct and operate a floating roof under paragraph (a) of this section.

(c) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of § 60.692–3(a) shall be installed.

(d) Except as provided in paragraph (c) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692–3 or 60.694 applicable to the same facilities.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995]

§ 60.694 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved by the applicable requirement in § 60.692, 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 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.

§ 60.695 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator.

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder shall be used to measure the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of ±1 percent of the temperature being measured, expressed in °C, or ±0.5 °C (0.9 °F), whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder shall be used to measure the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of ±1 percent of the temperature being measured, expressed in °C, or ±0.5 °C (0.9 °F), whichever is greater.

(3) Where a carbon adsorber is used for VOC emissions reduction, a monitoring device that continuously indicates and records the VOC concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(i) For a carbon adsorption system that regenerates the carbon bed directly onsite, a monitoring device that continuously indicates and records the volatile organic compound concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(ii) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device (e.g., a carbon canister), the concentration level of the organic compounds 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 organic concentration in the gas stream vented to the carbon adsorption system.

(4) Where a flare is used for VOC emission reduction, the owner or operator shall comply with the monitoring requirements of 40 CFR 60.18(f)(2).

(b) Where a VOC recovery device other than a carbon adsorber is used to meet the requirements specified in § 60.692–5(a), the owner or operator shall provide to the Administrator 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.

(c) An alternative operational 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.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.696 Performance test methods and procedures and compliance provisions.

(a) Before using any equipment installed in compliance with the requirements of § 60.692–2, § 60.692–3, § 60.692–4, § 60.692–5, or § 60.693, the owner or operator shall inspect such equipment for indications of potential emissions, defects, or other problems that may cause the requirements of this subpart not to be met. Points of inspection shall include, but are not limited to, seals, flanges, joints, gaskets, hatches, caps, and plugs.

(b) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.692–5 (other than a flare) is exempt from § 60.8 of the General Provisions and shall use Method 21 to measure the emission concentrations, using 500 ppm as the no detectable emission limit. The instrument shall be calibrated each day before using. The calibration gases shall be:

(1) Zero air (less than 10 ppm of hydrocarbon in air), and

(2) A mixture of either methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall conduct a performance test initially, and at other times as requested by the Administrator, using the test methods and procedures in § 60.18(f) to determine compliance of flares.

(d) After installing the control equipment required to meet § 60.693–2(a) or whenever sources that have ceased to treat refinery wastewater for a period of 1 year or more are placed back into service, the owner or operator shall determine compliance with the standards in § 60.693–2(a) as follows:

(1) The maximum gap widths and maximum gap areas between the primary seal and the separator wall and between the secondary seal and the separator wall shall be determined individually within 60 calendar days of the initial installation of the floating roof and introduction of refinery wastewater or 60 calendar days after the equipment is placed back into service using the following procedure when the separator is filled to the design operating level and when the roof is floating off the roof supports.

(i) Measure seal gaps around the entire perimeter of the separator in each place where a 0.32 cm (0.125 in.) diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the separator and measure the gap width and perimetrical distance of each such location.

(ii) The total surface area of each gap described in (d)(1)(i) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the wall to the seal and multiplying each such width by its respective perimetrical distance.

(iii) 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 perimeter of the separator basin and compare each to the maximum gap area as specified in § 60.693–2.

(2) The gap widths and total gap area shall be determined using the procedure in paragraph (d)(1) of this section according to the following frequency:

(i) For primary seals, once every 5 years.

(ii) For secondary seals, once every year.

§ 60.697 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. All records shall be retained for a period of 2 years after being recorded unless otherwise noted.

(b)(1) For individual drain systems subject to § 60.692–2, the location, date, and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plug is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

(2) For junction boxes subject to § 60.692–2, the location, date, and corrective action shall be recorded for inspections required by § 60.692–2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

(3) For sewer lines subject to §§ 60.692–2 and 60.693–1(e), the location, date, and corrective action shall be recorded for inspections required by §§ 60.692–2(c) and 60.693–1(e) when a problem is identified that could result in VOC emissions.

(c) For oil-water separators subject to § 60.692–3, the location, date, and corrective action shall be recorded for inspections required by § 60.692–3(a) when a problem is identified that could result in VOC emissions.

(d) For closed vent systems subject to § 60.692–5 and completely closed drain systems subject to § 60.693–1, the location, date, and corrective action shall be recorded for inspections required by § 60.692–5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions.

(e)(1) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded.

(2) The reason for the delay as specified in § 60.692–6 shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time.

(3) The signature of the owner or operator (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded.

(4) The date of successful repair or corrective action shall be recorded.

(f)(1) A copy of the design specifications for all equipment used to comply with the provisions of this subpart shall be kept for the life of the source in a readily accessible location.

(2) The following information pertaining to the design specifications shall be kept.

(i) Detailed schematics, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(3) The following information pertaining to the operation and maintenance of closed drain systems and closed vent systems shall be kept in a readily accessible location.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions shall be kept for the life of the facility. This documentation is to include a general description of the gas streams that enter the control device, including flow and volatile organic compound content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C (1,500 °F) is used to meet the 95-percent requirement, documentation that those conditions exist is sufficient to meet the requirements of this paragraph.

(ii) For a carbon adsorption system that does not regenerate the carbon

bed directly onsite in the control device such as a carbon canister, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also 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.

(iii) Periods when the closed vent systems and control devices required in § 60.692 are not operated as designed, including periods when a flare pilot does not have a flame shall be recorded and kept for 2 years after the information is recorded.

(iv) Dates of startup and shutdown of the closed vent system and control devices required in § 60.692 shall be recorded and kept for 2 years after the information is recorded.

(v) The dates of each measurement of detectable emissions required in §§ 60.692, 60.693, or 60.692–5 shall be recorded and kept for 2 years after the information is recorded.

(vi) The background level measured during each detectable emissions measurement shall be recorded and kept for 2 years after the information is recorded.

(vii) The maximum instrument reading measured during each detectable emission measurement shall be recorded and kept for 2 years after the information is recorded.

(viii) Each owner or operator of an affected facility that uses a thermal incinerator 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 (50 °F) below the design combustion zone temperature, and shall keep such records for 2 years after the information is recorded.

(ix) Each owner or operator of an affected facility that uses a catalytic incinerator 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 (50 °F) below the design gas stream temperature, and records of all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference, and shall keep such records for 2 years after the information is recorded.

(x) Each owner or operator of an affected facility that uses a carbon adsorber shall maintain continuous records of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(A) Each owner or operator of an affected facility that uses a carbon adsorber which is regenerated directly onsite shall maintain continuous records of the volatile organic compound concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average volatile organic compound concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(B) If a carbon adsorber that is not regenerated directly onsite 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 that the existing carbon in the control device is replaced with fresh carbon.

(g) If an owner or operator elects to install a tightly sealed cap or plug over

a drain that is out of active service, the owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains.

(h) For stormwater sewer systems subject to the exclusion in § 60.692–1(d)(1), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that no wastewater from any process units or equipment is directly discharged to the stormwater sewer system.

(i) For ancillary equipment subject to the exclusion in § 60.692–1(d)(2), an owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which demonsrate that the ancillary equipment does not come in contact with or store oily wastewater.

(j) For non-contact cooling water systems subject to the exclusion in § 60.692–1(d)(3), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that the cooling water does not contact hydrocarbons or oily wastewater and is not recirculated through a cooling tower.

(k) For oil-water separators subject to § 60.693–2, the location, date, and corrective action shall be recorded for inspections required by §§ 60.693–2(a)(1)(iii)(A) and (B), and shall be maintained for the time period specified in paragraphs (k)(1) and (2) of this section.

(1) For inspections required by § 60.693-2(a)(1)(iii)(A), ten years after the information is recorded.

(2) For inspections required by § 60.693–2(a)(1)(iii)(B), two years after the information is recorded.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.698 Reporting requirements.

(a) An owner or operator electing to comply with the provisions of § 60.693 shall notify the Administrator of the alternative standard selected in the report required in § 60.7.

(b)(1) Each owner or operator of a facility subject to this subpart shall submit to the Administrator within 60 days after initial startup a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests of process drains, sewer lines, junction boxes, oil-water separators, and closed vent systems and control devices have been carried out in accordance with these standards. Thereafter, the owner or operator shall submit to the Administrator semiannually a certification that all of the required inspections have been carried out in accordance with these standards.

(2) Each owner or operator of an affected facility that uses a flare shall submit to the Administrator within 60 days after initial startup, as required under § 60.8(a), a report of the results of the performance test required in § 60.696(c).

(c) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted initially and semiannually thereafter to the Administrator.

(d) As applicable, a report shall be submitted semiannually to the Administrator that indicates:

(1) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature,

(2) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) 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, or,

(3) Each 3-hour period of operation during which the average VOC concentration level or reading of organics in the exhaust gases from a carbon adsorber is more than 20 percent greater than the design exhaust gas concentration level or reading.

(i) Each 3-hour period of operation during which the average volatile organic compound concentration level or reading of organics in the exhaust gases from a carbon adsorber which is regenerated directly onsite is more than 20 percent greater than the design exhaust gas concentration level or reading.

(ii) Each occurrence when the carbon in a carbon adsorber system that is not regenerated directly onsite in the control device is not replaced at the predetermined interval specified in § 60.695(a)(3)(ii).

(e) If compliance with the provisions of this subpart is delayed pursuant to § 60.692–7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown.

[53 FR 47623, Nov. 23, 1988, as amended at 60 FR 43260, Aug. 18, 1995]

§ 60.699 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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:

§ 60.694 Permission to use alternative means of emission limitations.

[53 FR 47623, Nov. 23, 1985]

Subpart RRR—Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

SOURCE: 58 FR 45962, Aug. 31, 1993, unless otherwise noted.

§ 60.700 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in § 60.707 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after June 29, 1990:

(1) Each reactor process not discharging its vent stream into a recovery system.

(2) Each combination of a reactor process and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more reactor processes and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any reactor process that is designed and operated as a batch operation is not an affected facility.

(2) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§ 60.702(c); 60.704 (d), (e), and (f); and 60.705 (g), (l)(1), (l)(6), and (t).

(3) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than 1 gigagram per year (1,100 tons per year) is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in § 60.705 (i), (l)(5), and (n).

(4) Each affected facility operated with a vent stream flow rate less than

0.011 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in § 60.704(g) and § 70.705 (h), (l)(4), and (o).

(5) If the vent stream from an affected facility is routed to a distillation unit subject to subpart NNN and has no other releases to the air except for a pressure relief valve, the facility is exempt from all provisions of this subpart except for § 60.705(r).

(6) Any reactor process operating as part of a process unit which produces beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(7) Any reactor process that is subject to the provisions of subpart DDD is not an affected facility.

(8) Each affected facility operated with a concentration of total organic compounds (TOC) (less methane and ethane) in the vent stream less than 300 ppmv as measured by Method 18 or a concentration of TOC in the vent stream less than 150 ppmv as measured by Method 25A is exempt from all provisions of this subpart except for the test method and procedure and the reporting and recordkeeping requirements in § 60.704(h) and paragraphs (j), (l)(8), and (p) of § 60.705.

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§ 60.702 through 60.705 and 60.708. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(2), (4), and (8) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

(NOTE: The intent of these standards is to minimize emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of TOC, measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.)

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

§ 60.701 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

Batch operation means any noncontinuous reactor process that is not characterized by steady-state conditions and in which reactants are not added and products are not removed simultaneously.

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.

Combustion device means an individual unit of equipment, such as an incinerator, flare, boiler, or process heater, used for combustion of a vent stream discharged from the process vent.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a line.

Halogenated vent stream means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. If there is energy recovery, the energy recovery section and the combustion chambers are not of integral design. That is, the energy recovery section and the combustion section are not physically formed into one manufactured or assembled unit but are joined by ducts or connections carrying flue gas.

Primary fuel means the fuel fired through a burner or a number of similar burners. The primary fuel provides the principal heat input to the device, and the amount of fuel is sufficient 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 means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.707. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in § 60.707 which is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

Reactor processes are unit operations 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.

Recovery device means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

Recovery system means an individual recovery device or series of such devices applied to the same vent stream.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge results 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.

Secondary fuel means a fuel fired through a burner other than a primary fuel burner. The secondary fuel may provide supplementary heat in addition to the heat provided by the primary fuel.

Total organic compounds or TOC means those compounds measured according to the procedures in § 60.704(b)(4). For the purposes of measuring molar composition as required in § 60.704(d)(2)(i) and § 60.704(d)(2)(ii), hourly emission rate as required in § 60.704(d)(5) and § 60.704(e), and TOC concentration as required in § 60.705(b)(4) and § 60.705(f)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded.

Total resource effectiveness or TRE index value means a measure of the supplemental total resource requirement per unit reduction of TOC associated

with a vent stream from an affected reactor process facility, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equation given under § 60.704(e).

Vent stream means any gas stream discharged directly from a reactor process to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks.

§ 60.702 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by § 60.8 and § 60.704 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

§ 60.703 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.702(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(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 is encountered.

(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) A flow indicator that provides a record of vent stream flow diverted from being routed to the incinerator at least once every 15 minutes for each affected facility, except as provided in paragraph (a)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the incinerator, resulting in its emission to the atmosphere.

(ii) 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. 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.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with § 60.702(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the flare at least once every 15 minutes for each affected facility, except as provided in paragraph (b)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the flare, resulting in its emission to the atmosphere.

(ii) 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. 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.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.702(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow diverted from being routed to the boiler or process heater at least once every 15 minutes for each affected facility, except as provided in paragraph (c)(1)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the boiler or process heater, resulting in its emission to the atmosphere.

(ii) 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. 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.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) design heat input capacity. Any vent stream introduced with primary fuel into a boiler or process heater is exempt from this requirement.

(d) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under § 60.702(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of ±0.02 specific gravity units, each equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of ±10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red,

photoionization, or thermal conductivity, each equipped with a continuous recorder.

(e) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.702 with a control device other than an incinerator, boiler, process heater, or flare; or a recovery device other than an absorber, condenser, or carbon adsorber, shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

§ 60.704 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.702, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.702(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken. The TOC concentration corrected to 3 percent O_2 (Cc) shall be computed using the following equation:

$$C_C = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent O_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(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 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg TOC/hr.

E_o=Mass rate of TOC discharged to the atmosphere, kg TOC/hr.

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2 \sum_{j=1}^{n} C_{ij} M_{ij} Q_i$$

$$E_i = K_2 \sum_{j=1}^{n} C_{oj} M_{ij} Q_o$$

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, ppm 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, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/hr).

K_2=Constant, 2.494×10^{-6} (l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components ''j'', dry basis, ppm by volume.

n=Number of components in the sample.

(5) The requirement for an initial performance test is waived, in accordance with § 60.8(b), for the following:

(i) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek compliance with § 60.702(a).

(ii) When a vent stream is introduced into a boiler or process heater with the primary fuel.

(iii) The Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(6) For purposes of complying with the 98 weight-percent reduction in § 60.702(a), if the vent stream entering a boiler or process heater with a design capacity less than 44 MW (150 million Btu/hour) is introduced with the combustion air or as secondary fuel, the weight-percent reduction of TOC (minus methane and ethane) across the combustion device shall be determined by comparing the TOC (minus methane and ethane) in all combusted vent streams, primary fuels, and secondary fuels with the TOC (minus methane and ethane) exiting the combustion device.

(c) When a flare is used to seek to comply with § 60.702(b), the flare shall comply with the requirements of § 60.18.

(d) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.702(b) and for determining the process vent stream TRE index value to determine compliance under § 60.700(c)(2) and § 60.702(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in § 60.704 (d)(2) and (d)(3) shall be, except for the situations outlined in paragraph (d)(1)(ii) of this section, prior to the inlet of any control device, prior to any postreactor dilution of the stream with air, and prior to any postreactor introduction of halogenated compounds into the process vent stream. No traverse site selection method is needed for vents smaller than 4 inches in diameter.

(ii) If any gas stream other than the reactor vent stream is normally conducted through the final recovery device:

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which any nonreactor stream or stream from a nonaffected reactor process is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any vent stream and at the outlet of the final recovery device.

(C) This efficiency of the final recovery device shall be applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of any nonreactor stream or stream from a nonaffected reactor process to determine the concentration of TOC in the reactor process vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.704(d) (4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as

specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \sum_{j=1}^{n} C_j H_j \quad 1 - B_{ws}$$

where:

H_T=Net heating value of the sample, MJ/scm, where the net enthalpy per mole of vent stream 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, as in the definition of Q_s (vent stream flow rate).

K_1=Constant, 1.740×10^{-7} (l/ppm) (g-mole/scm) (MJ/kcal), where standard temperature for (g-mole/scm) is 20 °C.

C_j=Concentration on a dry basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.704(d)(2).

H_j=Net heat of combustion of compound j, kcal/g-mole, based on combustion at 25 °C and 760 mm Hg. The heats of combustion of vent stream components would be required to be determined using ASTM D2382–76 or 88 or D4809–95 (incorporation by reference as specified in § 60.17 of this part) if published values are not available or cannot be calculated.

B_{ws}=Water vapor content of the vent stream, proportion by volume.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \sum_{j=1}^{n} C_j M_j Q_s$$

where:

E_{TOC}=Emission rate of TOC in the sample, kg/hr.

K_2=Constant, 2.494×10^{-6} (l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

C_j=Concentration on a dry basis of compound j in ppm as measured by Method 18 as indicated in § 60.704(d)(2).

M_j=Molecular weight of sample j, g/g-mole.

Q_s=Vent stream flow rate (dscm/min) at a temperature of 20 °C.

(6) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(e) For purposes of complying with § 60.700(c)(2) and § 60.702(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) of this section and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[a + b(Q_s)^{0.88} + c(Q_s) + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5} \right]$$

(i) Where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is greater than or equal to 14.2 scm/min:

TRE=TRE index value.

Q_s=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

H_T=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream 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 as in the definition of Q_s.

Y_s=Q_s for all vent stream categories listed in table 1 except for Category E vent streams where Y_s=(Q_s)(H_T)/3.6.

E_{TOC}=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 1.

TABLE 1—TOTAL RESOURCE EFFECTIVENESS COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR SUBJECT TO THE NEW SOURCE PERFORMANCE STANDARDS FOR REACTOR PROCESSES

	a	b	c	d	e	f
DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤3.5: *Q_s=Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤18.8	19.18370	0.27580	0.75762	−0.13064	0	0.01025
18.8<Q_s≤699	20.00563	0.27580	0.30387	−0.13064	0	0.01025
699<Q_s≤1,400	39.87022	0.29973	0.30387	−0.13064	0	0.01449
1,400<Q_s≤2,100	59.73481	0.31467	0.30387	−0.13064	0	0.01775
2,100<Q_s≤2,800	79.59941	0.32572	0.30387	−0.13064	0	0.02049
2,800<Q_s≤3,500	99.46400	0.33456	0.30387	−0.13064	0	0.02291
DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)>3.5: *Q_s=Vent Stream Flow Rate (scm/min)*						
14.2<Q_s≤18.8	18.84466	0.26742	−0.20044	0	0	0.01025
18.8<Q_s≤699	19.66658	0.26742	−0.25332	0	0	0.01025
699<Q_s≤1,400	39.19213	0.29062	−0.25332	0	0	0.01449
1,400<Q_s≤2,100	58.71768	0.30511	−0.25332	0	0	0.01775
2,100<Q_s≤2,800	78.24323	0.31582	−0 25332	0	0	0.02049
2,800<Q_s≤3,500	97.76879	0.32439	−0.25332	0	0	0.02291
DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤0.48: *Q_s=Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤1,340	8.54245	0.10555	0.09030	−0.17109	0	0.01025
1,340<Q_s≤2,690	16.94386	0.11470	0.09030	−0.17109	0	0.01449
2,690<Q_s≤4,040	25.34528	0.12042	0.09030	−0.17109	0	0.01775
DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0.48<NET HEATING VALUE (MJ/scm)≤1.9: *Q_s=Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤1,340	9.25233	0.06105	0.31937	−0.16181	0	0.01025
1,340<Q_s≤2,690	18.36363	0.06635	0.31937	−0.16181	0	0.01449
2,690<Q_s≤4,040	27.47492	0.06965	0.31937	−0.16181	0	0.01775
DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9<NET HEATING VALUE (MJ/scm)≤3.6: *Q_s=Vent Stream Flow Rate (scm/min)*						
14.2≤Q_s≤1,180	6.67868	0.06943	0.02582	0	0	0.01025
1,180<Q_s≤2,370	13.21633	0.07546	0.02582	0	0	0.01449
2,370<Q_s≤3,550	19.75398	0.07922	0.02582	0	0	0.01755
DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)>3.6: *Y_s=Dilution Flow Rate (scm/min)=(Q_s) (H_T)/3.6*						
14.2≤Y_s≤1,180	6.67868	0	0	−0.00707	0.02220	0.01025
1,180<Y_s≤2,370	13.21633	0	0	−0.00707	0.02412	0.01449
2,370<Y_s≤3,550	19.75398	0	0	−0.00707	0.02533	0.01755

(ii) For a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is less than 14.2 scm/min:

TRE=TRE index value.

Q_s=14.2 scm/min.

H_T=(FLOW)(HVAL)/14.2

where the following inputs are used:

FLOW=Vent stream flow rate (scm/min), at a standard temperature of 20 °C.

HVAL=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream 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 as in definition of Q_s.

Y_s=14.2 scm/min for all vent streams except for Category E vent streams, where Y_s=(14.2)(H_T)/3.6.

E_{TOC}=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}}\left[a(Q_s) + b(Q_s)^{0.8} + c(Q_s)(H_T) + d(E_{TOC}) + e\right]$$

where:

TRE=TRE index value.

E_{TOC}=Hourly emission rate of TOC reported in kg/hr.

Q_s=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

H_T=Vent stream net heating value (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 as in the definition of Q_s.

a, b, c, d, and e are coefficients. The set of coefficients that apply to a vent stream can be obtained from table 2.

TABLE 2—TOTAL RESOURCE EFFECTIVENESS COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE SUBJECT TO THE NEW SOURCE PERFORMANCE STANDARDS FOR REACTOR PROCESSES

	a	b	c	d	e
H_T<11.2 MJ/scm	2.25	0.288	−0.193	−0.0051	2.08
H_T≥11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08

(f) Each owner or operator of an affected facility seeking to comply with § 60.700(c)(2) or § 60.702(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change on the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.704 in order to determine compliance with § 60.702 (a) or (b). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with § 60.8 and § 60.704 and shall comply with § 60.703, § 60.704 and § 60.705. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(g) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with § 60.700(c)(4) shall use Method 2, 2A, 2C, or 2D of appendix A to 40 CFR part 60, as appropriate, for determination of volumetric flow rate.

(h) Each owner or operator seeking to demonstrate that a reactor process vent stream has a TOC concentration for compliance with the low concentration exemption in § 60.700(c)(8) shall conduct an initial test to measure TOC concentration.

(1) The sampling site shall be selected as specified in paragraph (d)(1)(i) of this section.

(2) Method 18 or Method 25A of part 60, appendix A shall be used to measure concentration.

(3) Where Method 18 is used to qualify for the low concentration exclusion in § 60.700(c)(8), the procedures in § 60.704(b)(4) (i) and (iv) shall be used to measure TOC concentration, and the procedures of § 60.704(b)(3) shall be used to correct the TOC concentration to 3 percent oxygen. To qualify for the exclusion, the results must demonstrate that the concentration of TOC, corrected to 3 percent oxygen, is below 300 ppm by volume.

(4) Where Method 25A is used, the following procedures shall be used to calculate ppm by volume TOC concentration, corrected to 3 percent oxygen:

(i) Method 25A shall be used only if a single organic compound is greater than 50 percent of total TOC, by volume, in the reactor process vent stream. This compound shall be the principal organic compound.

(ii) The principal organic compound may be determined by either process knowledge or test data collected using an appropriate EPA Reference Method. 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 reactor process vent stream conditions.

(iii) The principal organic compound shall be used as the calibration gas for Method 25A.

(iv) The span value for Method 25A shall be 300 ppmv.

(v) Use of Method 25A 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, corrected to 3 percent oxygen, is below 150 ppm by volume to qualify for the low concentration exclusion in § 60.700(c)(8).

(vii) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (b)(3) of this section.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.705 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.702 shall notify the Administrator of the specific provisions of § 60.702 (§ 60.702 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.702 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.704 no later than 180 days from initial start-up.

(b) Each owner or operator 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 § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used or where the reactor process vent stream is introduced as the primary fuel to any size boiler or process heater to comply with § 60.702(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.705(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.704(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.704(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted); or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally; or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration [and within 15 minutes of completion of any cooling cycle(s)], and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally); or

(iv) As an alternative to § 60.705(b)(4)(i), (ii) or (iii), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) 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 § 60.703 (a) and (c) 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. Where a combustion device is used to comply with § 60.702(a), 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 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the

average combustion temperature during the most recent performance test at which compliance with § 60.702(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which 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 at which compliance with § 60.702(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the bed during the most recent performance test at which compliance with § 60.702(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with § 60.702(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr) where the vent stream is introduced with the combustion air or as a secondary fuel.

(4) For boilers 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 § 60.702(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep records of the following:

(1) Up-to-date, readily accessible continuous records of the flow indication specified under § 60.703(a)(2)(i), § 60.703(b)(2)(i) and § 60.703(c)(1)(i), as well as up-to-date, readily accessible records of all periods and the duration when the vent stream is diverted from the control device.

(2) Where a seal mechanism is used to comply with § 60.703(a)(2)(ii), § 60.703(b)(2)(ii), and § 60.703(c)(1)(ii), a record of continuous flow is not required. In such cases, the owner or operator shall keep up-to-date, readily accessible records of all monthly visual inspections of the seals as well as readily accessible records of all periods and the duration when the seal mechanism is broken, the bypass line valve position has changed, the serial number of the broken car-seal has changed, or when the key for a lock-and-key type configuration has been checked out.

(e) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under § 60.703(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(f) 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 § 60.703(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. Where an owner or operator seeks to comply with § 60.702(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where

an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent or 5 °C greater, whichever is less stringent, than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.702(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or reactors;

(2) Any recalculation of the TRE index value performed pursuant to § 60.704(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.704(d).

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in § 60.700(c)(4) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.011 scm/min and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.700(c)(3) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the low concentration exemption in § 60.700(c)(8) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the concentration of the vent stream of the affected facility.

(k) Each owner or operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.700 (c)(2), (c)(3), or (c)(4) or § 60.702 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under § 60.705 (c), (f), and (g).

(2) All periods and duration recorded under § 60.705(d) when the vent stream is diverted from the control device to the atmosphere.

(3) All periods recorded under § 60.705(f) in which the pilot flame of the flare was absent.

(4) Any change in equipment or process operation that increases the operating vent stream flow rate above the

low flow exemption level in § 60.700(c)(4), including a measurement of the new vent stream flow rate, as recorded under § 60.705(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and E_{TOC}. The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in § 60.700(c), except for the total resource effectiveness index greater than 8.0 exemption in § 60.700(c)(2), the facility must begin compliance with the requirements set forth in § 60.702.

(5) Any change in equipment or process operation, as recorded under paragraph (i) of this section, that increases the design production capacity above the low capacity exemption level in § 60.700(c)(3) and the new capacity resulting from the change for the reactor process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and E_{TOC}. The performance test is subject to the requirements of § 60.8. The facility must begin compliance with the requirements set forth in § 60.702 or § 60.700(d). If the facility chooses to comply with § 60.702, the facility may qualify for an exemption under § 60.700(c)(2), (4), or (8).

(6) Any recalculation of the TRE index value, as recorded under § 60.705(g).

(7) All periods recorded under § 60.705(d) in which the seal mechanism is broken or the by-pass line valve position has changed. A record of the serial number of the car-seal or a record to show that the key to unlock the bypass line valve was checked out must be maintained to demonstrate the period, the duration, and frequency in which the bypass line was operated.

(8) Any change in equipment or process operation that increases the vent stream concentration above the low concentration exemption level in § 60.700(c)(8), including a measurement of the new vent stream concentration, as recorded under § 60.705(j). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. If the vent stream concentration is above 300 ppmv as measured using Method 18 or above 150 ppmv as measured using Method 25A, a performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and E_{TOC}. The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in § 60.700(c), except for the TRE index greater than 8.0 exemption in § 60.700(c)(2), the facility must begin compliance with the requirements set forth in § 60.702.

(m) The requirements of § 60.705(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.705(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(3) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(4) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in § 60.704.

(p) Each owner or operator that seeks to demonstrate compliance with

§ 60.700(c)(8) must submit to the Administrator an initial report including a concentration measurement using the test method specified in § 60.704.

(q) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.702 other than as provided under § 60.703 (a), (b), (c), and (d).

(r) Each owner or operator whose reactor process vent stream is routed to a distillation unit subject to subpart NNN and who seeks to demonstrate compliance with § 60.700(c)(5) shall submit to the Administrator a process design description as part of the initial report. This process design description must be retained for the life of the process. No other records or reports would be required unless process changes are made.

(s) Each owner or operator who seeks to demonstrate compliance with § 60.702 (a) or (b) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system.

(t) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(2) must maintain a record of the initial test for determining the total resource effectiveness index and the results of the initial total resource effectiveness index calculation.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

§ 60.706 Reconstruction.

(a) For purposes of this subpart ''fixed capital cost of the new components,'' as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following June 29, 1990. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

(b) [Reserved]

§ 60.707 Chemicals affected by subpart RRR.

Chemical	CAS No. [1]
Acetaldehyde	75–07–0
Acetic acid	64–19–7
Acetic anhydride	108–24–7
Acetone	67–64–1
Acetone cyanohydrin	75–86–5
Acetylene	74–86–2
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Adipic acid	124–04–9
Adiponitrile	111–69–3
Alcohols, C–11 or lower, mixtures.	
Alcohols, C–12 or higher, mixtures.	
Alcohols, C–12 or higher, unmixed.	
Allyl chloride	107–05–1
Amylene	513–35–9
Amylenes, mixed.	
Aniline	62–53–3
Benzene	71–43–2
Benzenesulfonic acid	98–11–3
Benzenesulfonic acid C_{10-16}-alkyl derivatives, sodium salts	68081–81–2
Benzyl chloride	100–44–7
Bisphenol A	80–05–7
Brometone	76–08–4
1,3-Butadiene	106–99–0
Butadiene and butene fractions.	
n-Butane	106–97–8
1,4-Butanediol	110–63–4
Butanes, mixed.	
1-Butene	106–98–9
2-Butene	25167–67–3
Butenes, mixed.	
n-Butyl acetate	123–86–4
Butyl acrylate	141–32–2
n-Butyl alcohol	71–36–3
sec-Butyl alcohol	78–92–2
tert-Butyl alcohol	75–65–0
Butylbenzyl phthalate	85–68–7
tert-Butyl hydroperoxide	75–91–2
2-Butyne-1,4-diol	110–65–6
Butyraldehyde	123–72–8
Butyric anhydride	106–31–0
Caprolactam	105–60–2
Carbon disulfide	75–15–0
Carbon tetrachloride	56–23–5
Chloroacetic acid	79–11–8
Chlorobenzene	108–90–7
Chlorodifluoromethane	75–45–6
Chloroform	67–66–3
p-Chloronitrobenzene	100–00–5
Citric acid	77–92–9
Cumene	98–82–8
Cumene hydroperoxide	80–15–9
Cyanuric chloride	108–77–0
Cyclohexane	110–82–7
Cyclohexane, oxidized	68512–15–2
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Cyclohexanone oxime	100–64–1
Cyclohexene	110–83–8
Cyclopropane	75–19–4
Diacetone alcohol	123–42–2
1,4-Dichlorobutene	110–57–6
3,4-Dichloro-1-butene	64037–54–3

Chemical	CAS No. [1]
Dichlorodifluoromethane	75–71–8
Dichlorodimethylsilane	75–78–5
Dichlorofluoromethane	75–43–4
Diethanolamine	111–42–2
Diethylbenzene	25340–17–4
Diethylene glycol	111–46–6
Di-isodecyl phthalate	26761–40–0
Dimethyl terephthalate	120–61–6
2,4-(and 2,6)-dinitrotoluene	121–14–2
	606–20–2
Dioctyl phthalate	117–81–7
Dodecene	25378–22–7
Dodecylbenzene, nonlinear.	
Dodecylbenzenesulfonic acid	27176–87–0
Dodecylbenzenesulfonic acid, sodium salt	25155–30–0
Epichlorohydrin	106–89–8
Ethanol	64–17–5
Ethanolamine	141–43–5
Ethyl acetate	141–78–6
Ethyl acrylate	140–88–5
Ethylbenzene	100–41–4
Ethyl chloride	75–00–3
Ethylene	74–85–1
Ethylene dibromide	106–93–4
Ethylene dichloride	107–06–2
Ethylene glycol	107–21–1
Ethylene glycol monobutyl ether	111–76–2
Ethylene glycol monoethyl ether acetate	111–15–9
Ethylene glycol monomethyl ether	109–86–4
Ethylene oxide	75–21–8
2-Ethylhexyl alcohol	104–76–7
(2-Ethylhexyl) amine	104–75–6
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547–17–8
Formaldehyde	50–00–0
Glycerol	56–81–5
n-Heptane	142–82–5
Heptenes (mixed).	
Hexamethylene diamine	124–09–4
Hexamethylene diamine adipate	3323–53–3
Hexamethylenetetramine	100–97–0
Hexane	110–54–3
Isobutane	75–28–5
Isobutanol	78–83–1
Isobutylene	115–11–7
Isobutyraldehyde	78–84–2
Isopentane	78–78–4
Isoprene	78–79–5
Isopropanol	67–63–0
Ketene	463–51–4
Linear alcohols, ethoxylated, mixed.	
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed.	
Linear alcohols, sulfated, sodium salt, mixed.	
Linear alkylbenzene	123–01–3
Maleic anhydride	108–31–6
Mesityl oxide	141–79–7
Methanol	67–56–1
Methylamine	74–39–5
ar-Methylbenzenediamine	25376–45–8
Methyl chloride	74–87–3
Methylene chloride	75–09–2
Methyl ethyl ketone	78–93–3
Methyl isobutyl ketone	108–10–1
Methyl methacrylate	80–62–6
1-Methyl-2-pyrrolidone	872–50–4
Methyl tert-butyl ether.	
Naphthalene	91–20–3
Nitrobenzene	98–95–3
1-Nonene	27215–95–8
Nonyl alcohol	143–08–8
Nonylphenol	25154–52–3
Nonylphenol, ethoxylated	9016–45–9
Octene	25377–83–7
Oil-soluble petroleum sulfonate, calcium salt.	
Pentaerythritol	115–77–5
3-Pentenenitrile	4635–87–4
Pentenes, mixed	109–67–1
Perchloroethylene	127–18–4
Phenol	108–95–2
1-Phenylethyl hydroperoxide	3071–32–7
Phenylpropane	103–65–1
Phosgene	75–44–5
Phthalic anhydride	85–44–9
Propane	74–98–6
Propionaldehyde	123–38–6
Propyl alcohol	71–23–8
Propylene	115–07–1
Propylene glycol	57–55–6
Propylene oxide	75–56–9
Sorbitol	50–70–4
Styrene	100–42–5
Terephthalic acid	100–21–0
Tetraethyl lead	78–00–2
Tetrahydrofuran	109–99–9
Tetra (methyl-ethyl) lead.	
Tetramethyl lead	75–74–1
Toluene	108–88–3
Toluene-2,4-diamine	95–80–7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471–62–5
1,1,1-Trichloroethane	71–55–6
1,1,2-Trichloroethane	79–00–5
Trichloroethylene	79–01–6
Trichlorofluoromethane	75–69–4
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1
Triethanolamine	102–71–6
Triethylene glycol	112–27–6
Vinyl acetate	108–05–4
Vinyl chloride	75–01–4
Vinylidene chloride	75–35–4
m-Xylene	108–38–3
o-Xylene	95–47–6
p-Xylene	106–42–3
Xylenes (mixed)	1330–20–7

[1] CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995]

§ 60.708 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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: § 60.703(e).

Subpart SSS—Standards of Performance for Magnetic Tape Coating Facilities

SOURCE: 53 FR 38914, Oct. 3, 1988, unless otherwise noted.

§ 60.710 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each coating operation; and

(2) Each piece of coating mix preparation equipment.

(b) Any new coating operation that utilizes less than 38 m^3 of solvent or any modified or reconstructed coating operation that utilizes less than 370 m^3 of solvent for the manufacture of magnetic tape per calendar year is subject only to the requirements of §§ 60.714(a), 60.717(b), and 60.717(c). If the amount of solvent utilized for the manufacture of magnetic tape equals or exceeds these amounts in any calendar year, the facility is subject to § 60.712 and all other sections of this subpart. Once a facility has become subject to § 60.712 and all other sections of this subpart, it will remain subject to those requirements regardless of changes in annual solvent utilization.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 22, 1986.

§ 60.711 Definitions, symbols, and cross reference tables.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

(1) *Base film* means the substrate that is coated to produce magnetic tape.

(2) *Capture system* means any device or combination of devices that contains or collects an airborne pollutant and directs it into a duct.

(3) *Coating applicator* means any apparatus used to apply a coating to a continuous base film.

(4) *Coating mix preparation equipment* means all mills, mixers, holding tanks, polishing tanks, and other equipment used in the preparation of the magnetic coating formulation but does not include those mills that do not emit VOC because they are closed, sealed, and operated under pressure.

(5) *Coating operation* means any coating applicator, flashoff area, and drying oven located between a base film unwind station and a base film rewind station that coat a continuous base film to produce magnetic tape.

(6) *Common emission control device* means a control device controlling emissions from the coating operation as well as from another emission source within the plant.

(7) *Concurrent* means construction of a control device is commenced or completed within the period beginning 6 months prior to the date construction of affected coating mix preparation equipment commences and ending 2 years after the date construction of affected coating mix preparation equipment is completed.

(8) *Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

(9) *Cover* means, with respect to coating mix preparation equipment, a device that lies over the equipment opening to prevent VOC from escaping and that meets the requirements found in § 60.712(c)(1)–(5).

(10) *Drying oven* means a chamber in which heat is used to bake, cure, polymerize, or dry a surface coating.

(11) *Equivalent diameter* means four times the area of an opening divided by its perimeter.

(12) *Flashoff area* means the portion of a coating operation between the coating applicator and the drying oven where solvent begins to evaporate from the coated base film.

(13) *Magnetic tape* means any flexible substrate that is covered on one or both sides with a coating containing magnetic particles and that is used for audio or video recording or information storage.

(14) *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 across such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

(15) *Nominal 1-month period* means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR

60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

(16) *Temporary enclosure* means a total enclosure that is constructed for the sole purpose of measuring the fugitive emissions from an affected facility. A temporary 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 enclosure will be assumed to achieve total capture of fugitive VOC emissions if it conforms to the requirements found in § 60.713(b)(5)(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.

(17) *Total enclosure* means a structure that is constructed around a source of emissions so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. 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 § 60.713(b)(5)(i) is assumed to be a total enclosure. The owner or operator of a permanent enclosure that does not meet the requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. Such approval shall be granted upon a demonstration to the satisfaction of the Administrator that all VOC emissions are contained and vented to the control device.

(18) *Utilize* refers to the use of solvent that is delivered to coating mix preparation equipment for the purpose of formulating coatings to be applied on an affected coating operation and any other solvent (e.g., dilution solvent) that is added at any point in the manufacturing process.

(19) *VOC content of the coating applied* means the product of Method 24 VOC analyses or formulation data (if the data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator. This quantity is intended to include all VOC that actually are emitted from the coating operation in the gaseous phase. Thus, for purposes of the liquid-liquid VOC material balance in § 60.713(b)(1), any VOC (including dilution solvent) added to the coatings must be accounted for, and any VOC contained in waste coatings or retained in the final product may be measured and subtracted from the total. (These adjustments are not necessary for the gaseous emission test compliance provisions of § 60.713(b).)

(20) *Volatile Organic Compounds* or *VOC* means any organic compounds that participate in atmospheric photochemical reactions or that are measured by Method 18, 24, 25, or 25A or an equivalent or alternative method as defined in 40 CFR 60.2.

(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_{aj}=the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) C_{bi}=the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) C_{di}=the concentration of VOC in each gas stream (i) entering the emission control device from the affected coating operation, in parts per million by volume.

(5) C_{fk}=the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

(6) C_{gv}=the concentration of VOC in the 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 adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

(7) C_{hv}=the concentration of 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 VOC emission capture efficiency of the 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 weighted average mass of VOC per volume of coating solids (in kilograms per liter) applied each nominal 1-month period.

(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 carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

(14) L_{si}=the volume fraction of solids in each coating (i) applied during a nominal 1-month period as determined from the facility's formulation records.

(15) M_{ci}=the total mass in kilograms of each coating (i) applied at an affected coating operation during a nominal 1-month period as determined from facility records. 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 appropriate adjustments shall be made to account for any ingredients added after the mass of the coating has been determined.

(16) M_r=the total mass in kilograms of VOC recovered for a nominal 1-month period.

(17) Q_{aj}=the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure 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 Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(19) Q_{di}=the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(20) Q_{fk}=the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(21) Q_{gv}=the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that adsorber vessel.

(22) Q_{hv}=the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method

25A is used to measure VOC concentration.

(23) 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).

(24) 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).

(25) R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(26) RS_i=the total mass (kg) of VOC retained in the coated base film after oven drying for a given magnetic tape product.

(27) V_{ci}=the total volume in liters of each coating (i) applied during a nominal 1-month period as determined from facility records.

(28) W_{oi}=the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24. 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 appropriate adjustments shall be made to account for any ingredients added after the weight fraction of VOC in the coating has been determined.

(c) tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1A—CROSS REFERENCE [A,B]

Status	Standard [c]	Compliance provisions [d]—§ 60.713
A. Coating operation alone:		
New	§ 60.712(a): Recover or destroy at least 93 percent of the VOC applied	(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d)
Modified or reconstructed:		
1. If at least 90 percent of the VOC applied is recovered or destroyed prior to modification/reconstruction.	§ 60.712(b)(1): (i) Maintain demonstrated level of VOC control or 93 percent, whichever is lower. (ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient, a demonstration must be made that the overall level of VOC control is at least as high as required with the old control device (90 to 93 percent) and, if the demonstrated level is higher than the old level, maintain the higher level of control (up to 93 percent).	(a)(1), (a)(3), (b)(1), (b)(2), (b)(3), (b)(4), (c), (d)
2. If existing coating operation has a total enclosure vented to a control device that is at least 92 percent efficient.	§ 60.712(b)(2): (i) Continue to vent all VOC emissions to the control device and maintain control efficiency at or above the demonstrated level or 95 percent, whichever is lower. (ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient and all VOC emissions must be vented from the total enclosure to the new control device.	(a)(2), (b)(5), (c), (d)
3. If existing coating operation is not in the previous two categories.	§ 60.712(b)(3): Recover or destroy at least 93 percent of the VOC applied.	(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d)

TABLE 1A—CROSS REFERENCE [A,B]—Continued

Status	Standard [c]	Compliance provisions [d]—§ 60.713
B. Coating mix preparation equipment alone:		
New:		
1. With concurrent construction of new VOC control device (other than a condenser) on the coating operation.	§ 60.712(c): Install and use covers and vent to a control device that is at least 95 percent efficient [e].	(b)(6)
2. Without concurrent construction of new VOC control device on the coating operation *or* with concurrent construction of a condenser.	§ 60.712 (d)(1) *or* (d)(2): Install and use covers and vent to a control device *or* install and use covers [e].	(b)(7), (b)(8)
Modified or reconstructed.	§ 60.712 (d)(1) *or* (d)(2): Install and use covers and vent to a control device *or* install and use covers [e].	(b)(7), (b)(8)
C. Both coating operation and coating mix preparation equipment: New and modified or reconstructed.	§ 60.712(e): In lieu of standards in § 60.712(a)–(d), use coatings containing a maximum of 0.20 kg VOC per liter of coating solids.	(b)(9)

[a] This table is presented for the convenience of the user and is not intended to supercede the language of the regulation. For the details of the requirements, refer to the text of the regulation.

[b] Refer to part B to determine which subsections of §§ 60.714, 60.715, and 60.717 correspond to each compliance provision (§ 60.713).

[c] As per § 60.710(b), any new coating operation with solvent utilization <38 m^3/yr or any modified or reconstructed coating operation with solvent utilization <370 m^3/yr is exempt from the VOC standards (§ 60.712). Such coating operations are subject only to §§ 60.714(a), 60.717(b), and 60.717(c). However, should a coating operation once exceed the applicable annual solvent utilization cutoff, that coating operation shall be subject to the VOC standards (§ 60.712) and all other sections of the subpart. Once this has occurred, the coating operation shall remain subject to those requirements regardless of changes in annual solvent utilization.

[d] As applicable.

[e] Section 60.716 permits the use of an alternative means of VOC emission limitation that achieves an equivalent or greater VOC emission reduction.

TABLE 1B—CROSS REFERENCE

Compliance provisions [a]—§ 60.713	Test methods—§ 60.715	Category/equipment [b]	Installation of monitoring devices and recordkeeping—§ 60.714	Reporting and monitoring requirements [c]—§ 60.717
A. Coating operation alone:				
(b)(1)—When emissions from only the affected coating operation are controlled by a solvent recovery device, perform a liquid-liquid VOC material balance.	(a)		(b), (i), (k)	(a), (d)(1), (e), (h), (i)
(b)(2)—When emissions from only the affected coating operation are controlled by an incinerator or when a common emission control device (other than a carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, perform a gaseous emission test.	(b)–(g)	General CA CO TI CI PE, TE	(i), (k) (c) (d) (e) (f) (g)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(5) (d)(6) (d)(7) (d)(8)

TABLE 1B—CROSS REFERENCE—Continued

Compliance provisions [a]—§ 60.713	Test methods—§ 60.715	Category/equipment [b]	Installation of monitoring devices and recordkeeping—§ 60.714	Reporting and monitoring requirements [c]—§ 60.717
(b)(3)—When emissions from both the affected coating operation and from other sources of VOC are controlled by a carbon adsorption system with individual exhaust stacks for each adsorber vessel, perform a gaseous emission test.	(b)–(g)	General CA PE, TE	(i), (k) (c) (g)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(8)
(b)(4)—When emissions from more than one affected coating operation are vented through the same duct to a control device also controlling emissions from nonaffected sources that are vented separately from the affected coating operations, consider the combined affected coating operations as a single emission source and conduct a compliance test described in § 60.713(b)(2) or (3).	(b)–(g)	General CA CO TI CI PE, TE	(i), (k) (c) (d) (e) (f) (g)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(5) (d)(6) (d)(7) (d)(8)
(b)(5)—Alternative to § 60.713(b)(1)–(4): Demonstrate that a total enclosure is installed around the coating operation and that all VOC emissions are vented to a control device with the specified efficiency.	(b)–(g)	General CA CO TI CI TE	(i), (k) (c) (d) (e) (f) (h)	(a), (e) (h), (i) (d)(3), (d)(4) (d)(5) (d)(6) (d)(7) (d)(8)
B. Coating mix preparation equipment alone:				
(b)(6)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)–(5) are installed and used properly; procedures detailing the proper use of covers are posted; the mix equipment is vented to a control device; and the control device efficiency is greater than or equal to 95 percent.	(b)–(g)	General CA TI CI	(k) (c) (e) (f)	(a), (e), (h), (i) (d)(3), (d)(4) (d)(6) (d)(7)
(b)(7)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)–(5) are installed and used properly; procedures detailing the proper use of covers are posted; and the mix equipment is vented to a control device.				
(b)(8)—Demonstrate that covers meeting the requirement of § 60.712(c)(1)–(5) are installed and used properly and that procedures detailing the proper use of the covers are posted.				
C. Both coating operation and coating mix preparation equipment: (b)(9)—Determine that weighted average mass of VOC in the coating per volume of coating solids applied for each month.	(a)		(i), (j) (k)	(d)(2), (e), (g), (h), (i)

[a] Section 60.713(a) specifies the procedures to be used prior to modification/reconstruction to establish the applicability of the VOC standards in § 60.712(b)(1) and (2) for modified/reconstructed coating operations. Section 60.713(a)(1) requires the use of the procedures of § 60.713(b)(1), (2), (3), or (4) to demonstrate prior to modification/reconstruction that 90 percent of the applied VOC is recovered or destroyed. Section 60.713(a)(2) requires the use of procedures of § 60.713(b)(5) to demonstrate prior to modification/reconstruction that the coating operation has a total enclosure vented to a control device that is at least 92 percent efficient. Sections 60.713(c) and (d) do not have corresponding test methods, monitoring, reporting, or recordkeeping requirements.

[b] TI = thermal incinerator; CI = catalytic incinerator; CA = carbon adsorber; CO = condenser; PE = partial enclosure; TE = total enclosure.

[c] See § 60.717(f) for additional reporting requirements when coating mix preparation equipment is constructed at a time when no coating operation is being constructed. See § 60.717(g) for addition reporting requirements when coating mix preparation equipment is constructed at the same time as an affected coating operation.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988; 53 FR 49822, Dec. 9, 1988]

§ 60.712 Standards for volatile organic compounds.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever date comes first.

(a) Each owner or operator shall control emissions from a new coating operation by recovering or destroying at least 93 percent of the VOC content of the coating applied at the coating applicator.

(b) Each owner or operator of a modified or reconstructed coating operation shall meet the appropriate standard set out in (b)(1), (2), or (3) of this section.

(1) For coating operations demonstrated prior to modification or reconstruction pursuant to § 60.713(a)(1) to have emissions controlled by the recovery or destruction of at least 90 percent of the VOC content of the coating applied at the coating applicator.

(i) Subject to the provisions of (b)(1)(ii) of this section, each owner or operator shall continue to control emissions from the coating operation to at least the demonstrated level or 93 percent, whichever is lower.

(ii) If the VOC control device in use during the emission reduction demonstration made pursuant to § 60.713(a)(1) is subsequently replaced, each owner or operator shall:

(A) Install a control device that is at least 95 percent efficient; and

(B) Control emissions from the coating operation to at least the level determined pursuant to § 60.713(a)(3)(ii).

(2) For coating operations demonstrated prior to modification or reconstruction pursuant to § 60.713(a)(2) to have a total enclosure installed around the coating operation and all VOC emissions ventilated to a control device that is at least 92 percent efficient.

(i) Subject to the provisions of (b)(2)(ii) of this section, each owner or operator shall continue to ventilate all VOC emissions from the total enclosure to the control device and maintain control device efficiency at or above the demonstrated level or 95 percent, whichever is lower.

(ii) If the VOC control device in use during the control device efficiency demonstration made pursuant to § 60.713(a)(2) is subsequently replaced, each owner or operator shall install a VOC control device that is at least 95 percent efficient and ventilate all VOC emissions from the total enclosure to the control device.

(3) For coating operations not subject to paragraph (b)(1) or (2) of this section, each owner or operator shall control emissions from the coating operation by recovering or destroying at least 93 percent of the VOC content of the coating applied at the coating applicator.

(c) Each owner or operator constructing new coating mix preparation equipment with concurrent construction of a new VOC control device (other than a condenser) on a magnetic tape coating operation shall control emissions from the coating mix preparation equipment by installing and using a cover on each piece of equipment and venting the equipment to a 95 percent efficient control device. Each cover shall meet the following specifications:

(1) Cover shall be 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 cover in place. Such activities shall be carried out through ports of the minimum practical size.

(2) Cover shall extend at least 2 cm beyond the outer rim of the opening or shall be attached to the rim;

(3) Cover shall be of such design and construction that contact is maintained between cover and rim along the entire perimeter;

(4) Any breach in the cover (such as an opening for insertion of a mixer shaft or port for addition of ingredients) shall be covered consistent with (c)(2) and (3) of this section when not actively in use. An opening sufficient to allow safe clearance for a mixer shaft is acceptable during those periods when the shaft is in place; and

(5) A polyethylene or nonpermanent cover may be used provided it meets

the requirements of (c)(2), (3), and (4) of this section. Such a cover shall not be reused after once being removed.

(d) Each owner or operator of affected coating mix preparation equipment not subject to § 60.712(c) shall control emissions from the coating mix preparation equipment by either:

(1) Installing and using a cover that meets the specifications in paragraphs (c)(1)–(5) of this section and venting VOC emissions from the equipment to a VOC control device; or

(2) Installing and using a cover that meets the specifications in paragraphs (c)(1)–(5) of this section.

(e) In lieu of complying with § 60.712(a) through (d), each owner or operator may use coatings that contain a maximum of 0.20 kg of VOC per liter of coating solids as calculated on a weighted average basis for each nominal 1-month period.

§ 60.713 Compliance provisions.

(a) Applicability of § 60.712(b)(1) and (2) (standards for modified or reconstructed coating operations) and determination of control level required in § 60.712(b)(1)(ii)(B).

(1) To establish applicability of § 60.712(b)(1), each owner or operator must demonstrate, prior to modification or reconstruction, that at least 90 percent of the VOC content of the coating applied at the coating applicator is recovered or destroyed. Such demonstration shall be made using the procedures of paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section, as appropriate.

(2) To establish applicability of § 60.712(b)(2), each owner or operator must demonstrate, prior to modification or reconstruction, that a total enclosure is installed around the existing coating operation and that all VOC emissions are ventilated to a control device that is at least 92 percent efficient. Such demonstration shall be made using the procedures of § 60.713(b)(5).

(3) To determine the level of control required in § 60.712(b)(1)(ii)(B), the owner or operator must demonstrate:

(i) That the VOC control device subsequently installed is at least 95 percent efficient. Such demonstration shall be made using Equation (2) specified in paragraph (b)(2)(iv) of this section or Equations (4) and (5) specified in paragraphs (b)(3)(iv) and (v) of this section, as applicable, and the test methods and procedures specified in § 60.715(b)–(g); and

(ii) That the overall level of control after the VOC control device is installed is at least as high as the level demonstrated prior to modification or reconstruction pursuant to paragraph (a)(1) of this section. Such demonstrations shall be made using the procedures of paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section, as appropriate. The required overall level of control subsequent to this demonstration shall be the level so demonstrated or 93 percent, whichever is lower.

(b) Compliance demonstrations for § 60.712(a), (b)(1), (b)(2), (b)(3), (c), (d), and (e).

(1) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) 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 shall perform a liquid-liquid VOC material balance over each and every nominal 1-month period. When demonstrating compliance by this procedure, § 60.8(f) of the General Provisions does not apply. The amount of liquid VOC applied and recovered shall be determined as discussed in paragraph (b)(1)(iii) of this section. The overall VOC emission reduction (R) is calculated using the following equation:

$$R = \frac{M_r}{\sum_{i=1}^{n} \left[W_{oi} M_{ci} - RS_i \right]} \times 100$$

(Equation 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 value of RS_i 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 (b)(1)(i)(A) of this section

shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions.

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (b)(1) of this section shall:

(A) Measure the amount of coating applied at the coating applicator;

(B) Determine the VOC content of all coatings applied using the test method specified in § 60.715(a);

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of VOC recovered by the solvent recovery device over each nominal 1-month period. The device shall be certified by the manufacturer to be accurate to within ±2.0 percent;

(D) Measure the amount of VOC recovered; and

(E) Calculate the overall VOC emission reduction (R) for each and every nominal 1-month period using Equation 1.

(iv) For facilities subject to § 60.712 (a) or (b)(3), compliance is demonstrated if the value of R is equal to or greater than 93 percent.

(v) Subject to the provisions of (b)(1)(vi) of this section, for facilities subject to § 60.712(b)(1), compliance is demonstrated if the value of R is equal to or greater than the percent reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 93 percent whichever is lower.

(vi) For facilities subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of E (control device efficiency) is greater than or equal to 0.95 and if the value of R is equal to or greater than the percent reduction demonstrated pursuant to § 60.713(a)(3) or 93 percent, whichever is lower.

(2) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when the emissions from only an affected coating operation are controlled by a dedicated incinerator or when a common emission control device (other than a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, each owner or operator of an affected coating operation shall perform a gaseous emission test using the following procedures:

(i) Construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.715(b) through (g);

(ii) Determine capture efficiency from the coating operation by capturing, venting, and measuring all VOC emissions from the operation. During a performance test, the owner or operator of an affected coating operation located in an area with other sources of VOC shall isolate the coating operation emissions from all other sources of VOC by one of the following methods:

(A) Build a temporary enclosure (see § 60.711(a)(16)) around the affected coating operation; or

(B) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected coating operation 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 emission sources connected and operating;

(iv) Determine the efficiency (E) of the control device using the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{p} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}}$$

(Equation 2)

(v) Determine the efficiency (F) of the VOC capture system using the following equation:

$$F = \frac{\sum_{i=1}^{n} Q_{di}C_{di}}{\sum_{i=1}^{n} Q_{di}C_{di} + \sum_{k=1}^{p} Q_{fk}C_{fk}}$$

(Equation 3)

(vi) For each affected coating operation subject to § 60.712(a) or (b)(3), compliance is demonstrated if the product of (E)×(F) is equal to or greater than 0.93.

(vii) For each affected coating operation subject to § 60.712(b)(1)(i), compliance is demonstrated if the product of (E)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 0.93, whichever is lower.

(viii) For each affected coating operation subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of E is greater than or equal to 0.95 and if the product of (E)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(3) or 0.93, whichever is lower.

(3) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel is used to control emissions from an affected coating operation as well as from other sources of VOC, each owner or operator of an affected coating operation shall perform a gaseous emission test using the following procedures:

(i) Construct the overall VOC emission reduction system so that each volumetric flow rate and the total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.715(b) through (g);

(ii) Assure that all VOC emissions from the coating operation are segregated from other VOC sources and that the emissions can be captured for measurement, as described in § 60.713(b)(2)(ii)(A) and (B);

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency (H_v) of each individual adsorber vessel (v) using the following equation:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}}$$

(Equation 4)

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual adsorber vessel (v) using the following equation:

$$H_{sys} = \frac{\sum_{v=1}^{g} H_v Q_{hv}}{\sum_{v=1}^{g} Q_{hv}}$$

(Equation 5)

(vi) Determine the efficiency (F) of the VOC capture system using Equation (3).

(vii) For the affected coating operation subject to § 60.712(a) or (b)(3), compliance is demonstrated if the product of (H_{sys})×(F) is equal to or greater than 0.93.

(viii) For the affected coating operation subject to § 60.712(b)(1)(i), compliance is demonstrated if the product of (H_{sys})×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 0.93, whichever is lower.

(ix) For each affected coating operation subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of H_{sys} is greater than or equal to 0.95 and if the product of (H_{sys})×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(3) or 0.93, whichever is lower.

(4) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when the VOC emissions from more than one affected coating operation are collected by a common capture system and are vented through a common duct to a control

device that is also controlling emissions from nonaffected sources and the emissions from the nonaffected sources are vented separately from the affected coating operations, the owner or operator may:

(i) Consider the combined affected coating operations as a single emission source; and

(ii) Conduct a compliance test on this single source by the methods described in §60.713(b)(2) or (3), as applicable.

(5) An alternative method of demonstrating compliance with §60.712(a) or (b)(3) (standards for coating operations) and the sole method of demonstrating compliance with §60.712(b)(2) (standards for modified or reconstructed coating operations) is the installation of a total enclosure around the coating operation and the ventilation of all VOC emissions from the total enclosure to a control device with the efficiency specified in paragraph (b)(5)(iii)(A) or (B) of this section, as applicable. If this method is selected, the compliance test methods described in paragraphs (b)(1), (b)(2), (b)(3), and (b)(4) of this section are not required. Instead, each owner or operator of an affected coating operation shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (b)(5)(i)(A) through (D) of this section shall be assumed to be a total enclosure. The owner or operator of an enclosed coating operation that does not meet the 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 VOC emissions from the affected coating operation 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 across all natural draft openings (FV) shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(*1*) Construct all forced makeup air ducts and all exhaust ducts so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in §60.715(c) and (d). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(*2*) Determine FV by the following equation:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\ j} - \sum_{i=1}^{p} Q_{in\ i}}{\sum_{k=1}^{q} A_k}$$

(Equation 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 (4) and (5), as applicable, and the test methods and procedures specified in §60.715(b) through (g).

(iii) Compliance is demonstrated if the installation of a total enclosure is demonstrated and the value of E determined from Equation (2) (or the value of H_{sys} determined from Equations (4) and (5), as applicable) is equal to or greater than the required efficiency as specified below:

(A) For coating operations subject to the standards of §60.712(a), (b)(2)(ii), and (b)(3), 0.95 (95 percent); or

(B) For coating operations subject to the standards of § 60.712(b)(2)(i), the value of E determined from Equation (2) (or the value of H_{sys} determined from Equations (4) and (5), as applicable) pursuant to § 60.713(a)(2) prior to modification or reconstruction or 0.95 (95 percent), whichever is lower.

(6) To demonstrate compliance with § 60.712(c) (standard for new mix equipment with concurrent construction of a control device), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(i) Covers satisfying the requirements of § 60.712(c)(1)–(5) have been installed and are being used properly;

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used;

(iii) The coating mix preparation equipment is vented to a control device; and

(iv) The control device efficiency (E or H_{sys}, as applicable) determined using Equation (2) or Equations (4) and (5), respectively, and the test methods and procedures specified in § 60.715(b)–(g) is equal to or greater than 0.95.

(7) To demonstrate compliance with § 60.712(d)(1) (standard for mix equipment), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(i) Covers satisfying the requirements of § 60.712(c)(1)–(5) have been installed and are being used properly;

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used; and

(iii) The coating mix preparation equipment is vented to a control device.

(8) To demonstrate compliance with § 60.712(d)(2) (standard for mix equipment), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that both:

(i) Covers satisfying the requirements of § 60.712(c)(1)–(5) have been installed and are being used properly; and

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used.

(9) To determine compliance with § 60.712(e) (high-solids coatings alternative standard), each owner or operator of an affected facility shall determine the weighted average mass of VOC contained in the coating per volume of coating solids applied for each and every nominal 1-month period according to the following procedures:

(i) Determine the weight fraction of VOC in each coating applied using Method 24 as specified in § 60.715(a);

(ii) Determine the volume of coating solids in each coating applied from the facility records; and

(iii) Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^{n} W_{oi} M_{ci}}{\sum_{i=1}^{n} L_{si} V_{ci}}$$

(Equation 7)

(iv) For each affected facility where the value of G is less than or equal to 0.20 kilogram of VOC per liter of coating solids applied, the facility is in compliance.

(c) Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standards for coating operations specified in § 60.712(a) and (b) are being attained.

(d) If a control device other than a carbon adsorber, condenser, or incinerator is used to control emissions from an affected facility, the necessary operating specifications for that device must be obtained from the Administrator. An example of such a device is a flare.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988]

§ 60.714 Installation of monitoring devices and recordkeeping.

All monitoring devices required under the provisions of this section shall be installed and calibrated, according to the manufacturer's specifications, prior to the initial performance tests in locations such that representative values of the monitored parameters will be obtained. The parameters to be monitored shall be continuously measured and recorded during all performance tests.

(a) Each owner or operator of an affected coating operation that utilizes less solvent annually than the applicable cutoff provided in § 60.710(b) and that is not subject to § 60.712 (standards for coating operations) shall maintain records of actual solvent use.

(b) Each owner or operator of an affected coating operation demonstrating compliance by the test method described in § 60.713(b)(1) (liquid material balance) shall maintain records of all the following for each and every nominal 1-month period:

(1) Amount of coating applied at the applicator;

(2) Results of the reference test method specified in § 60.715(a) for determining the VOC content of all coatings applied;

(3) Amount VOC recovered; and

(4) Calculation of the percent VOC recovered.

(c) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a carbon adsorption system and demonstrating compliance by the procedures described in § 60.713(b)(2), (3), (4), (5), or (6) (which include control device efficiency determinations) shall carry out the monitoring and recordkeeping provisions of paragraph (c)(1) or (2) of this section, as appropriate.

(1) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in either the control device outlet gas stream or in both the control device inlet and outlet gas streams. The outlet gas stream would be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.717(d)(3). The inlet and outlet gas streams would be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.717(d)(4).

(2) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in the outlet gas stream for a minimum of one complete adsorption cycle per day for each adsorber vessel. The owner or operator may also monitor and record the concentration level of organic compounds in the common carbon adsorption system inlet gas stream or in each individual carbon adsorber vessel inlet stream. The outlet gas streams alone would be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.717(d)(3). In this case, the owner or operator shall compute daily a 3-day rolling average concentration level of organics in the outlet gas stream from each individual adsorber vessel. The inlet and outlet gas streams would be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.717(d)(4). In this case, the owner or operator shall compute daily a 3-day rolling average efficiency for each individual adsorber vessel.

(d) Each owner or operator of an affected coating operation controlled by a condensation system and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), or (5) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the temperature of the condenser exhaust stream.

(e) Each owner or operator of an affected coating operation or affected coating mix preparation equipment

controlled by a thermal incinerator and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), (5), or (6) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion temperature of the incinerator. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(f) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a catalytic incinerator and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), (5), or (6) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(g) Each owner or operator of an affected coating operation demonstrating compliance pursuant to § 60.713(b)(2), (3), or (4) (which include VOC capture system efficiency determinations) shall submit a monitoring plan for the VOC capture system to the Administrator for approval along with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions. This plan shall identify the parameter to be monitored as an indicator of VOC capture system performance (e.g., the amperage to the exhaust fans or duct flow rates) and the method for monitoring the chosen parameter. The owner or operator shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the value of the chosen parameter.

(h) Each owner or operator of an affected coating operation who uses the equipment alternative described in § 60.713(b)(5) to demonstrate compliance shall follow the procedures described in paragraph (g) of this section to establish a monitoring plan for the total enclosure.

(i) Each owner or operator of an affected coating operation shall record time periods of coating operations when an emission control device is not in use.

(j) Each owner or operator of an affected coating operation or affected coating mix preparation equipment complying with § 60.712(e) shall maintain records of the monthly weighted average mass of VOC contained in the coating per volume of coating solids applied for each coating, as described in § 60.713(b)(9)(i) through (iv).

(k) Records of the measurements and calculations required in §§ 60.713 and 60.714 must be retained for at least 2 years following the date of the measurements and calculations.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

[53 FR 38914, Oct. 3, 1988, as amended at 64 FR 7467, Feb. 12, 1999]

§ 60.715 Test methods and procedures.

Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance as follows:

(a) Method 24 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that plant coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern. For 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 film (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 Method 24 results.

(b) Method 18, 25, or 25A, as appropriate to the conditions at the site, is

used to determine VOC concentration. 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 § 60.8(d) of the General Provisions. 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)(1) and (2) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(1) When the method 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 adsorber vessels pursuant to § 60.713(b)(2), (4), (5), or (6), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all the individual adsorber vessels.

(2) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel pursuant to § 60.713(b)(3), (4), (5), or (6), each adsorber vessel shall be tested individually. The test for each adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(c) Method 1 or 1A is used for sample and velocity traverses.

(d) Method 2, 2A, 2C, or 2D is used for velocity and volumetric flow rates.

(e) Method 3 is used for gas analysis.

(f) Method 4 is used for stack gas moisture.

(g) Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988]

§ 60.716 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of VOC from any emission point subject to § 60.712(c) or (d) (standards for mix equipment) at least equivalent to that required by § 60.712 (c) or (d), respectively, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means. The notice may condition 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 public hearing.

(c) Any person seeking permission under this section shall submit either results from an emission test that documents the collection and measurement of all VOC emissions from a given control device or an engineering evaluation that documents the determination of such emissions.

§ 60.717 Reporting and monitoring requirements.

(a) For all affected coating operations subject to § 60.712(a), (b)(1), (b)(2), or (b)(3) and all affected coating mix preparation equipment subject to § 60.712(c), the performance test data and results shall be submitted to the Administrator as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A). In addition, the average values of the monitored parameters measured at least every 15 minutes and averaged over the period of the performance test shall be submitted with the results of all performance tests.

(b) Each owner or operator of an affected coating operation claiming to utilize less than the applicable volume of solvent specified in § 60.710(b) in the first calendar year of operation shall submit to the Administrator, with the notification of projected startup, a material flow chart indicating projected solvent use. The owner or operator shall also submit actual solvent use records at the end of the initial calendar year.

(c) Each owner or operator of an affected coating operation initially utilizing less than the applicable volume of solvent specified in § 60.710(b) per calendar year shall report the first calendar year in which actual annual solvent use exceeds the applicable volume.

(d) Each owner or operator of an affected coating operation, or affected

coating mix preparation equipment subject to § 60.712(c), shall submit semiannual reports to the Administrator documenting the following:

(1) The 1-month amount of VOC contained in the coating, the VOC recovered, and the percent emission reduction for months of noncompliance for any affected coating operation demonstrating compliance by the performance test method described in § 60.713(b)(1) (liquid material balance);

(2) The VOC contained in the coatings for the manufacture of magnetic tape for any 1-month period during which the weighted average solvent content (G) of the coatings exceeded 0.20 kilogram per liter of coating solids for those affected facilities complying with § 60.712(e) (high-solids coatings alternative standard);

(3) For those affected facilities monitoring only the carbon adsorption system outlet concentration levels of organic compounds, the periods (during actual coating operations) specified in paragraph (d)(3)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average value of the concentration level of organic compounds in the common outlet gas stream is more than 20 percent greater than the average value measured during the most recent performance test that demonstrated compliance.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the concentration level of organic compounds in the individual outlet gas stream is more than 20 percent greater than the average value for that adsorber vessel measured during the most recent performance test that demonstrated compliance.

(4) For those affected facilities monitoring both the carbon adsorption system inlet and outlet concentration levels of organic compounds, the periods (during actual coating operations), specified in (d)(4)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average carbon adsorption system efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.713(b)(2) or (4), the value of E determined using Equation (2) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(A) or § 60.713(b)(6), 0.95 (95 percent).

(C) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(B), the required value of E determined using Equation (2) pursuant to § 60.713(a)(2) prior to modification or reconstruction or 0.95 (95 percent), whichever is lower.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.713(b)(3) or (4), the value of H_v determined using Equation (4) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(A) or § 60.713(b)(6), 0.95 (95 percent).

(C) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(B), the value of H_v determined using Equation 4 pursuant to § 60.713(a)(2) prior to modification or reconstruction.

(5) All 3-hour periods (during actual coating operations) during which the average exhaust temperature is 5 or more Celsius degrees above the average temperature measured during the most recent performance test that demonstrated compliance for those affected facilities monitoring condenser exhaust gas temperature;

(6) All 3-hour periods (during actual coating operations) during which the average combustion temperature is more than 28 Celsius degrees below the average combustion temperature during the most recent performance test that demonstrated compliance for those affected facilities monitoring thermal incinerator combustion gas temperature;

(7) All 3-hour periods (during actual coating operations) during which the average gas temperature immediately before the catalyst bed is more than 28 Celsius degrees below the average gas temperature during the most recent performance test that demonstrated compliance and all 3-hour periods (during actual coating operations) during which the average gas temperature difference across the catalyst bed is less than 80 percent of the average gas temperature difference during the most recent performance test that demonstrated compliance for those affected facilities monitoring catalytic incinerator catalyst bed temperature; and

(8) All 3-hour periods (during actual coating operations) during which the average total enclosure or VOC capture system monitoring device readings vary by 5 percent or more from the average value measured during the most recent performance test that demonstrated compliance for those affected facilities monitoring a total enclosure pursuant to § 60.714(h) or VOC capture system pursuant to § 60.714(g).

(e) Each owner or operator of an affected coating operation, or affected coating mix preparation equipment subject to § 60.712(c), not required to submit reports under § 60.717(d) because no reportable periods have occurred shall submit semiannual reports so affirming.

(f) Each owner or operator of affected coating mix preparation equipment that is constructed at a time when no affected coating operation is being constructed shall:

(1) Be exempt from the reporting requirements specified in § 60.7(a)(1), (2), and (4); and

(2) Submit the notification of actual startup specified in § 60.7(a)(3).

(g) The owner or operator of affected coating mix preparation equipment that is constructed at the same time as an affected coating operation shall include the affected coating mix preparation equipment in all the reporting requirements for the affected coating operation specified in § 60.7(a)(1) through (4).

(h) The reports required under paragraphs (b) through (e) of this section shall be postmarked within 30 days of the end of the reporting period.

(i) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In this event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988; 64 FR 7467, Feb. 12, 1999]

§ 60.718 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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:

§ 60.711(a)(16)
§ 60.713(b)(1)(i)
§ 60.713(b)(1)(ii)
§ 60.713(b)(5)(i)
§ 60.713(d)
§ 60.715(a)
§ 60.716

[53 FR 38914, Oct. 3, 1988; 53 FR 47955, Nov. 29, 1988]

Subpart TTT—Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines

SOURCE: 53 FR 2676, Jan. 29, 1988, unless otherwise noted.

§ 60.720 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats.

(b) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 8, 1986.

§ 60.721 Definitions.

(a) As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Business machine means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:

(1) Products classified as typewriters under SIC Code 3572;

(2) Products classified as electronic computing devices under SIC Code 3573;

(3) Products classified as calculating and accounting machines under SIC Code 3574;

(4) Products classified as telephone and telegraph equipment under SIC Code 3661;

(5) Products classified as office machines, not elsewhere classified, under SIC Code 3579; and

(6) Photocopy machines, a subcategory of products classified as photographic equipment under SIC code 3861.

Coating operation means the use of a spray booth for the application of a single type of coating (e.g., prime coat); the use of the same spray booth for the application of another type of coating (e.g., texture coat) constitutes a separate coating operation for which compliance determinations are performed separately.

Coating solids applied means the coating solids that adhere to the surface of the plastic business machine part being coated.

Color coat means the coat applied to a part that affects the color and gloss of the part, not including the prime coat or texture coat. This definition includes fog coating, but does not include conductive sensitizers or electromagnetic interference/radio frequency interference shielding coatings.

Conductive sensitizer means a coating applied to a plastic substrate to render it conductive for purposes of electrostatic application of subsequent prime, color, texture, or touch-up coats.

Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coating means a conductive coating that is applied to a plastic substrate to attenuate EMI/RFI signals.

Fog coating (also known as mist coating and uniforming) means a thin coating applied to plastic parts that have molded-in color or texture or both to improve color uniformity.

Nominal 1-month period means either a calendar month, 30-day month, accounting month, or similar monthly time period that is established prior to the performance test (i.e., in a statement submitted with notification of anticipated actual startup pursuant to 40 CFR 60.7(2)).

Plastic parts means panels, housings, bases, covers, and other business machine components formed of synthetic polymers.

Prime coat means the initial coat applied to a part when more than one coating is applied, not including conductive sensitizers or electromagnetic interference/radio frequency interference shielding coatings.

Spray booth means the structure housing automatic or manual spray application equipment where a coating is applied to plastic parts for business machines.

Texture coat means the rough coat that is characterized by discrete, raised spots on the exterior surface of the part. This definition does not include conductive sensitizers or EMI/RFI shielding coatings.

Touch-up coat means the coat applied to correct any imperfections in the finish after color or texture coats have been applied. This definition does not include conductive sensitizers or EMI/RFI shielding coatings.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a plastic business machine part to the total amount of coating solids used.

VOC emissions means the mass of VOC's emitted from the surface coating of plastic parts for business machines expressed as kilograms of VOC's per liter of coating solids applied (i.e., deposited on the surface).

(b) All symbols used in this subpart not defined below are given meaning in the Act or subpart A of this part.

D_c=density of each coating as received (kilograms per liter)

D_d=density of each diluent VOC (kilograms per liter)

L_c=the volume of each coating consumed, as received (liters)

L_d=the volume of each diluent VOC added to coatings (liters)

L_s=the volume of coating solids consumed (liters)

M_d=the mass of diluent VOC's consumed (kilograms)

M_o=the mass of VOC's in coatings consumed, as received (kilograms)

N=the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)

T=the transfer efficiency for each type of application equipment used at a coating operation (fraction)

T_{avg}=the volume-weighted average transfer efficiency for a coating operation (fraction)

V_s=the proportion of solids in each coating, as received (fraction by volume)

W_o=the proportion of VOC's in each coating, as received (fraction by weight)

[53 FR 2676, Jan. 29, 1988, as amended at 54 FR 25459, June 15, 1989]

§ 60.722 Standards for volatile organic compounds.

(a) Each owner or operator of any affected facility which is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by §§ 60.8 and 60.723 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first. No affected facility shall cause the discharge into the atmosphere in excess of:

(1) 1.5 kilograms of VOC's per liter of coating solids applied from prime coating of plastic parts for business machines.

(2) 1.5 kilograms of VOC's per liter of coating solids applied from color coating of plastic parts for business machines.

(3) 2.3 kilograms of VOC's per liter of coating solids applied from texture coating of plastic parts for business machines.

(4) 2.3 kilograms of VOC's per liter of coatings solids applied from touch-up coating of plastic parts for business machines.

(b) All VOC emissions that are caused by coatings applied in each affected facility, regardless of the actual point of discharge of emissions into the atmosphere, shall be included in determining compliance with the emission limits in paragraph (a) of this section.

§ 60.723 Performance tests and compliance provisions.

(a) Section 60.8 (d) and (f) do not apply to the performance test procedures required by this section.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each nominal 1-month period for each affected facility according to the procedures in this section.

(1) The owner or operator shall determine the composition of coatings by analysis of each coating, as received, using Method 24, from data that have been determined by the coating manufacturer using Method 24, or by other methods approved by the Administrator.

(2) The owner or operator shall determine the volume of coating and the mass of VOC used for dilution of coatings from company records during each nominal 1-month period. If a common coating distribution system serves more than one affected facility or serves both affected and nonaffected spray booths, the owner or operator shall estimate the volume of coatings used at each facility by using procedures approved by the Administrator.

(i) The owner or operator shall calculate the volume-weighted average mass of VOC's in coatings emitted per unit volume of coating solids applied (N) at each coating operation [i.e., for each type of coating (prime, color, texture, and touch-up) used] during each

nominal 1-month period for each affected facility. Each 1-month calculation is considered a performance test. Except as provided in paragraph (b)(2)(iii) of this section, N will be determined by the following procedures:

(A) Calculate the mass of VOC's used (M_o+M_d) for each coating operation during each nominal 1-month period for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

where n is the number of coatings of each type used during each nominal 1-month period and m is the number of different diluent VOC's used during each nominal 1-month period. (Σ L_{dj} D_{dj} will be 0 if no VOC's are added to the coatings, as received.)

(B) Calculate the total volume of coating solids consumed (L_s) in each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

where n is the number of coatings of each type used during each nominal 1-month period.

(C) Select the appropriate transfer efficiency (T) from table 1 for each type of coating applications equipment used at each coating operation. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be approved by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the validity of the transfer efficiency claims.

(D) Where more than one application method is used within a single coating operation, the owner or operator shall determine the volume of each coating applied by each method through a means acceptable to the Administrator and compute the volume-weighted average transfer efficiency by the following equation:

$$T_{avg} = \frac{\sum_{i=1}^{n} \sum_{k=1}^{p} L_{cik} V_{sik} T_k}{L_s}$$

TABLE 1—TRANSFER EFFICIENCIES

Application methods	Transfer efficiency	Type of coating
Air atomized spray	0.25	Prime, color, texture, touch-up, and fog coats.
Air-assistd airless spray.	.40	Prime and color coats.
Electrostatic air spray	.40	Do.

where n is the number of coatings of each type used and p is the number of application methods used.

(E) Calculate the volume-weighted average mass of VOC's emitted per unit volume of coating solids applied (N) during each nominal 1-month period for each coating operation for each affected facility by the folowing equation:

$$N = \frac{M_o + M_d}{L_s T_{avg}}$$

(T_{avg}=T when only one type of coating operation occurs).

(ii) Where the volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of coating solids applied (N) is less than or equal to 1.5 kilograms per liter for prime coats, is less than or equal to 1.5 kilograms per liter for color coats, is less than or equal to 2.3 kilograms per liter for texture coats, and is less than or equal to 2.3 kilograms per liter for touch-up coats, the affected facility is in compliance.

(iii) If each individual coating used by an affected facility has a VOC content (kg VOC/l of solids), as received, which when divided by the lowest transfer efficiency at which the coating is applied for each coating operation results in a value equal to or less than 1.5 kilograms per liter for prime and color coats and equal to or less than 2.3 kilograms per liter for texture and touch-up coats, the affected facility is in compliance provided that no VOC's are added to the coatings during distribution or application.

(iv) If an affected facility uses add-on controls to control VOC emissions and if the owner or operator can demonstrate to the Administrator that the volume-weighted average mass of VOC's emitted to the atmosphere during each nominal 1-month period per unit volume of coating solids applied (N) is within each of the applicable limits expressed in paragraph (b)(2)(ii) of this section because of this equipment, the affected facility is in compliance. In such cases, compliance will be determined by the Administrator or a case-by-case basis.

[53 FR 2676, Jan. 29, 1988, as amended at 65 FR 61778, Oct. 17, 2000]

§ 60.724 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided for in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for the initial nominal 1-month period for each coating operation from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.723(b)(2)(iii), a list of the coatings used during the initial nominal 1-month period, the VOC content of each coating calculated from data determined using Method 24, and the lowest transfer efficiency at which each coating is applied during the initial nominal 1-month period.

(b) Following the initial report, each owner or operator shall:

(1) Report the volume-weighted average mass of VOC's per unit volume of coating solids applied for each coating operation for each affected facility during each nominal 1-month period in which the facility is not in compliance with the applicable emission limits specified in § 60.722. Reports of noncompliance shall be submitted on a quarterly basis, occurring every 3 months following the initial report; and

(2) Submit statements that each affected facility has been in compliance with the applicable emission limits specified in § 60.722 during each nominal

1-month period. Statements of compliance shall be submitted on a semiannual basis.

(c) These reports shall be postmarked not later than 10 days after the end of the periods specified in § 60.724(b)(1) and § 60.724(b)(2).

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each coating operation for each affected facility as specified in 40 CFR 60.7(d).

(e) Reporting and recordkeeping requirements for facilities using add-on controls will be determined by the Administrator on a case-by-case basis.

[53 FR 2676, Jan. 29, 1988, as amended at 65 FR 61778, Oct. 17, 2000]

§ 60.725 Test methods and procedures.

(a) The reference methods in appendix A to this part except as provided under § 60.8(b) shall be used to determine compliance with § 60.722 as follows:

(1) Method 24 for determination of VOC content of each coating as received.

(2) For Method 24, the sample must be at least a 1-liter sample in a 1-liter container.

(b) Other methods may be used to determine the VOC content of each coating if approved by the Administrator before testing.

§ 60.726 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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 the States:

Section 60.723(b)(1)
Section 60.723(b)(2)(i)(C)
Section 60.723(b)(2)(iv)
Section 60.724(e)
Section 60.725(b)

[53 FR 2676, Jan. 29, 1988, as amended at 53 FR 19300, May 27, 1988]

Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

SOURCE: 57 FR 44503, Sept. 28, 1992, unless otherwise noted.

§ 60.730 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each calciner and dryer at a mineral processing plant. Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.

(b) An affected facility that is subject to the provisions of subpart LL, Metallic Mineral Processing Plants, is not subject to the provisions of this subpart. Also, the following processes and process units used at mineral processing plants are not subject to the provisions of this subpart: vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries (as defined in § 60.731, ''Mineral processing plant'').

(c) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after April 23, 1986, is subject to the requirements of this subpart.

§ 60.731 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth furnaces.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to

the atmosphere from one or more affected facilities.

Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

Installed in series means a calciner and dryer installed such that the exhaust gases from one flow through the other and then the combined exhaust gases are discharged to the atmosphere.

Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

§ 60.732 Standards for particulate matter.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:

(a) Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm (0.025 gr/dscf) for dryers; and

(b) Exhibits greater than 10 percent opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

[57 FR 44503, Sept. 28, 1992, as amended at 65 FR 61778, Oct. 17, 2000]

§ 60.733 Reconstruction.

The cost of replacement of equipment subject to high temperatures and abrasion on processing equipment shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital cost that would be required to construct a comparable new facility'' under § 60.15. Calciner and dryer equipment subject to high temperatures and abrasion are: end seals, flights, and refractory lining.

§ 60.734 Monitoring of emissions and operations.

(a) With the exception of the process units described in paragraphs (b), (c), and (d) of this section, the owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device.

(b) In lieu of a continuous opacity monitoring system, the owner or operator of a ball clay vibrating grate dryer, a bentonite rotary dryer, a diatomite flash dryer, a diatomite rotary calciner, a feldspar rotary dryer, a fire clay rotary dryer, an industrial sand fluid bed dryer, a kaolin rotary calciner, a perlite rotary dryer, a roofing granules fluid bed dryer, a roofing granules rotary dryer, a talc rotary calciner, a titanium dioxide spray dryer, a titanium dioxide fluid bed dryer, a vermiculite fluid bed dryer, or a vermiculite rotary dryer who uses a dry control device may have a certified visible emissions observer measure and record three 6-minute averages of the opacity of visible emissions to the atmosphere each day of operation in accordance with Method 9 of appendix A of part 60.

(c) The owner or operator of a ball clay rotary dryer, a diatomite rotary dryer, a feldspar fluid bed dryer, a fuller's earth rotary dryer, a gypsum rotary dryer, a gypsum flash calciner, gypsum kettle calciner, an industrial sand rotary dryer, a kaolin rotary dryer, a kaolin multiple hearth furnace, a perlite expansion furnace, a talc flash dryer, a talc rotary dryer, a titanium dioxide direct or indirect rotary dryer or a vermiculite expansion furnace who uses a dry control device is exempt from the monitoring requirements of this section.

(d) The owner or operator of an affected facility subject to the provisions of this subpart who uses a wet scrubber to comply with the mass emission standard for any affected facility shall install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

§ 60.735 Recordkeeping and reporting requirements.

(a) Records of the measurements required in § 60.734 of this subpart shall be retained for at least 2 years.

(b) Each owner or operator who uses a wet scrubber to comply with § 60.732 shall determine and record once each day, from the recordings of the monitoring devices in § 60.734(d), an arithmetic average over a 2-hour period of both the change in pressure of the gas stream across the scrubber and the flowrate of the scrubbing liquid.

(c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by § 60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:

(1) All 6-minute periods during which the average opacity from dry control devices is greater than 10 percent; or

(2) Any daily 2-hour average of the wet scrubber pressure drop determined as described in § 60.735(b) that is less than 90 percent of the average value recorded according to § 60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard; or

(3) Each daily wet scrubber liquid flow rate recorded as described in § 60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to § 60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard.

(d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section provided that they comply with the requirements established by the State.

[57 FR 44503, Sept. 28, 1992, as amended at 58 FR 40591, July 29, 1993]

§ 60.736 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.732 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions.

(c) During the initial performance test of a wet scrubber, the owner or operator shall use the monitoring devices of § 60.734(d) to determine the average change in pressure of the gas stream across the scrubber and the average flowrate of the scrubber liquid during each of the particulate matter runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of § 60.735(c).

§ 60.737 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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.

Subpart VVV—Standards of Performance for Polymeric Coating of Supporting Substrates Facilities

SOURCE: 54 FR 37551, Sept. 11, 1989, unless otherwise noted.

§ 60.740 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each coating operation and any onsite coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates.

(b) Any affected facility for which the amount of VOC used is less than 95 Mg per 12-month period is subject only to the requirements of §§ 60.744(b), 60.747(b), and 60.747(c). If the amount of VOC used is 95 Mg or greater per 12-month period, the facility is subject to all the requirements of this subpart. Once a facility has become subject to the requirements of this subpart, it will remain subject to those requirements regardless of changes in annual VOC use.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after April 30, 1987, except for the facilities specified in paragraph (d) of this section.

(d) This subpart does not apply to the following:

(1) Coating mix preparation equipment used to manufacture coatings at one plant for shipment to another plant for use in an affected facility (coating operation) or for sale to another company for use in an affected facility (coating operation);

(2) Coating mix preparation equipment or coating operations during those times they are used to prepare or apply waterborne coatings so long as the VOC content of the coating does not exceed 9 percent by weight of the volatile fraction;

(3) Web coating operations that print an image on the surface of the substrate or any coating applied on the same printing line that applies the image.

§ 60.741 Definitions, symbols, and cross-reference tables.

(a) All terms used in this subpart not defined below have the meaning given to them in the Act and in subpart A of this part.

Coating applicator means any apparatus used to apply a coating to a continuous substrate.

Coating mix preparation equipment means all mixing vessels in which solvent and other materials are blended to prepare polymeric coatings.

Coating operation means any coating applicator(s), flashoff area(s), and drying oven(s) located between a substrate unwind station and a rewind station that coats a continuous web to produce a substrate with a polymeric coating. Should the coating process not employ a rewind station, the end of the coating operation is after the last drying oven in the process.

Common emission control device means a device controlling emissions from an affected coating operation as well as from any other emission source.

Concurrent means the period of time in which construction of an emission control device serving an affected facility is commenced or completed, beginning 6 months prior to the date that construction of the affected facility commences and ending 2 years after the date that construction of the affected facility is completed.

Control device means any apparatus that reduces the quantity of a pollutant emitted to the air.

Cover means, with respect to coating mix preparation equipment, a device that fits over the equipment opening to prevent emissions of volatile organic compounds (VOC) from escaping.

Drying oven means a chamber within which heat is used to dry a surface coating; drying may be the only process or one of multiple processes performed in the chamber.

Equivalent diameter means four times the area of an opening divided by its perimeter.

Flashoff area means the portion of a coating operation between the coating applicator and the drying oven where VOC begins to evaporate from the coated substrate.

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 across such an opening is a consequence of the difference in pressures on either side of the wall or barrier containing the opening.

Nominal 1-month period means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR 60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

Onsite coating mix preparation equipment means those pieces of coating mix preparation equipment located at the same plant as the coating operation they serve.

Polymeric coating of supporting substrates means a web coating process that applies elastomers, polymers, or prepolymers to a supporting web other than paper, plastic film, metallic foil, or metal coil.

Substrate means the surface to which a coating is applied.

Temporary enclosure means a total enclosure that is constructed for the sole purpose of measuring the fugitive VOC emissions from an affected facility.

Total enclosure means a structure that is constructed around a source of emissions and operated so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. The drying oven itself may be part of the total enclosure.

Vapor capture system means any device or combination of devices designed to contain, collect, and route solvent vapors released from the coating mix preparation equipment or coating operation.

VOC in the applied coating means the product of Method 24 VOC analyses or formulation data (if those data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator.

VOC used means the amount of VOC delivered to the coating mix preparation equipment of the affected facility (including any contained in premixed coatings or other coating ingredients prepared off the plant site) for the formulation of polymeric coatings to be applied to supporting substrates at the coating operation, plus any solvent added after initial formulation is complete (e.g., dilution solvent added at the coating operation). If premixed coatings that require no mixing at the plant site are used, ''VOC used'' means the amount of VOC delivered to the coating applicator(s) of the affected facility.

Volatile organic compounds or *VOC* means any organic compounds that participate in atmospheric photochemical reactions; or that are measured by a reference method, an equivalent method, an alternative method, or that are determined by procedures specified under any subpart.

Waterborne coating means a coating which contains more than 5 weight percent water in its volatile fraction.

Web coating means the coating of products, such as fabric, paper, plastic film, metallic foil, metal coil, cord, and yarn, that are flexible enough to be unrolled from a large roll; and coated as a continuous substrate by methods including, but not limited to, knife coating, roll coating, dip coating, impregnation, rotogravure, and extrusion.

(b) The nomenclature used in this subpart has the following meaning:

A_k=the area of each natural draft opening (k) in a total enclosure, in square meters.

C_{aj}=the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

C_{bi}=the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

C_{di}=the concentration of VOC in each gas stream (i) entering the emission control device from the affected coating operation, in parts per million by volume.

C_{fk}=the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

C_{gv}=the concentration of VOC in the gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For purposes of calculating the efficiency of the individual adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

C_{hv}=the concentration of VOC in the gas stream exiting each individual carbon

adsorber vessel (v), in parts per million by volume.

E=the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

F=the VOC emission capture efficiency of the vapor capture system achieved for the duration of the emission test (expressed as a fraction).

FV=the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

H_v=the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

H_{sys}=the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

M_{ci}=the total mass (kg) of each coating (i) applied to the substrate at an affected coating operation during a nominal 1-month period as determined from facility records.

M_r=the total mass (kg) of VOC recovered for a nominal 1-month period.

Q_{aj}=the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{bi}=the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{di}=the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{fk}=the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{gv}=the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that adsorber vessel.

Q_{hv}=the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{in\,i}$=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).

$Q_{out\,j}$=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).

R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a fraction).

RS_i=the total mass (kg) of VOC retained on the coated substrate after oven drying or contained in waste coating for a given combination of coating and substrate.

W_{oi}=the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24.

(c) Tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1A—CROSS REFERENCE[A,B]

Status	Standard	Compliance provisions § 60.743
A. Coating operation:		
1. If projected VOC use is <95 Mg/yr.	§ 60.740(b): Monitor VOC use	Not applicable.
2. If projected VOC use is ≥95 Mg/yr.	§ 60.742(b)(1): Reduce VOC emissions to the atmosphere from the coating operation by at least 90 percent; or.	(a)(1), (a)(2), (a)(3), or (a)(4);
	§ 60.742(b)(2): Install, operate, and maintain a total enclosure around the coating operation and vent the captured VOC emissions from the total enclosure to a control device that is at least 95 percent efficient.	(b), (e).

TABLE 1A—CROSS REFERENCE[A,B]—Continued

Status	Standard	Compliance provisions § 60.743
B. Coating mix preparation equipment:		
1. If projected VOC use is ≥95 Mg/yr but <130 Mg/yr.	§ 60.742(c)(3): (i) Install, operate, and maintain a cover on each piece of affected equipment; or (ii) install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions to a VOC control device.	(d), (e).
2. If projected VOC use is ≥130 Mg/yr but there is no concurrent construction of a control device.	§ 60.742(c)(2): (i) Install, operate, and maintain a cover on each piece of affected equipment; or (ii) install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions to a VOC control device.	(d).
3. If projected VOC use is ≥130 Mg/yr and there is concurrent construction of a control device.	§ 60.742(c)(1): Install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions from the covered equipment to a 95 percent efficient control device while preparation of the coating is taking place within the vessel.	(c), (e).

[a] This table is presented for the convenience of the user and is not intended to supersede the language of the regulation. For the details of the requirements, refer to the text of the regulation.
[b] Refer to table 1b to determine which subsections of §§ 60.744, 60.745, and 60.747 correspond to each compliance provision (§ 60.743).

TABLE 1B—CROSS REFERENCE

Compliance provisions—§ 60.743	Test methods—§ 60.745	Category/equipment[a]	Monitoring requirements—§ 60.744	Reporting and recordkeeping requirements—§ 60.747
A. Coating operation:				
(a)(1)—Gaseous emission test for coating operations not using carbon adsorption beds with individual exhausts.	(b)–(g)	General, CA, CO, TI, CI, PE, TE.	(a), (i), (j), (k), (c)(1), (d), (e), (f), (g).	(a), (d)(7), (f), (g), (h), (d)(1)(i), (d)(2)(i), (d)(3), (d)(4), (d)(5), (d)(6).
(a)(2)—Gaseous emission test for coating operations using carbon adsorption beds with individual exhausts.	(b)–(g)	General, CA, PE, TE	(a), (i), (j), (k), (c)(2), (g).	(a), (d)(7), (f), (g), (h), (d)(1)(ii), (d)(2)(ii), (d)(6).
(a)(3)—Monthly liquid material balance—can be used only when a VOC recovery device controls only those emissions from one affected coating operation.	(a)	VOC recovery	(i), (k)	(e), (f), (g), (h).
(a)(4)—Short-term (3 to 7 day) liquid material balance—may be used as an alternative to (a)(3).	(a)	General, CA, CO, PE, TE.	(a), (i), (j), (k), (c)(1), (c)(2), (d), (g).	(a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(3), (d)(6).
(b)—Alternative standard for coating operation—demonstrate use of approved total enclosure and emissions vented to a 95 percent efficient control device.	(b)–(g)	General, CA, CO, TI, CI, PE, TE.	(a), (i), (j), (k), (c)(1), (c)(2), (d), (e), (f), (h).	(a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(3), (d)(4), (d)(5), (d)(6).
B. Coating mix preparation equipment:				
(c)—Standard for equipment servicing a coating operation with concurrent construction of a control device that uses at least 130 Mg/yr of VOC—demonstrate that covers meeting specifications are installed and used properly; procedures detailing proper use are posted; the mix equipment is vented to a 95 percent efficient control device.	(b)–(g)	General, CA, TI, CI	(a), (i), (j), (k), (c)(1), (c)(2), (e), (f).	(a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(4), (d)(5).

TABLE 1B—CROSS REFERENCE—Continued

Compliance provisions—§ 60.743	Test methods—§ 60.745	Category/equipment [a]	Monitoring requirements—§ 60.744	Reporting and recordkeeping requirements—§ 60.747
(d)—Standard for equipment servicing a coating operation that does not have concurrent construction of a control device but uses at least 130 Mg/yr of VOC or for equipment servicing a coating operation that uses <130 Mg/yr but ≥95 Mg/yr of VOC—demonstrate that covers meeting specifications are installed and used properly; procedures detailing proper use are posted; the mix equipment is vented to a control device (optional).	No other requirements apply.			

[a] CA=carbon adsorber; CO=condenser; TI=thermal incinerator; CI=catalytic incinerator; PE=partial enclosure; TE=total enclosure.

§ 60.742 Standards for volatile organic compounds.

(a) Each owner or operator of an affected facility that is subject to the requirements of this subpart shall comply with the emissions limitations set forth in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever date comes first.

(b) For the coating operation, each owner or operator of an affected facility shall either:

(1) Reduce VOC emissions to the atmosphere from the coating operation by at least 90 percent (''emission reduction'' standard); or

(2) Install, operate, and maintain a total enclosure around the coating operation and vent the captured VOC emissions from the total enclosure to a control device that is at least 95 percent effecient (alternative standard).

(c) For the onsite coating mix preparation equipment of an affected facility, the owner or operator shall comply with the following requirements, as applicable:

(1) For an affected facility that has concurrent construction of a control device and uses at least 130 Mg of VOC per 12-month period, the owner or operator shall install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions from the covered mix equipment to a 95 percent efficient control device while preparation of the coating is taking place within the vessel.

(2) For an affected facility that does not have concurrent construction of a control device but uses at least 130 Mg of VOC per 12-month period, the owner or operator shall either:

(i) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment; or

(ii) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions to a VOC control device.

(3) For an affected facility that uses at least 95 Mg but less than 130 Mg of VOC per 12-month period, the owner or operator shall either.

(i) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment; or

(ii) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions to a VOC control device.

§ 60.743 Compliance provisions.

(a) To demonstrate compliance with the emission reduction standard for coating operations specified in § 60.742(b)(1), the owner or operator of the affected facility shall use one of the following methods.

(1) *Gaseous emission test for coating operations not using carbon adsorption beds with individual exhausts.* This method is applicable when the emissions from any affected coating operation are controlled by a control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel. The owner or operator using this method shall comply with the following procedures:

(i) Construct the vapor capture system and control device so that all gaseous volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.745(b) through (g);

(ii) Determine capture efficiency from the coating operation by capturing, venting, and measuring all VOC emissions from the coating operation. During a performance test, the owner or operator of an affected coating operation located in an area with other sources of VOC shall isolate the coating operation emissions from all other sources of VOC by one of the following methods:

(A) Build a temporary enclosure, as defined in § 60.741(a) and conforming to the requirements of § 60.743(b)(1), around the affected coating operation. The temporary enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on performance of the capture system; or

(B) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected coating operation through any building ventilation system and other room exhausts such as those on drying ovens. All such ventilation air must be vented through stacks suitable for testing because the VOC content in each must be determined.

(iii) Operate the emission control device with all emission sources connected and operating.

(iv) Determine the efficiency (E) of the control device by Equation 1:

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{n} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}} \qquad \text{(Equation 1)}$$

(v) Determine the efficiency (F) of the vapor capture system by Equation 2:

$$F = \frac{\sum_{i=1}^{n} Q_{di}C_{di}}{\sum_{i=1}^{n} Q_{di}C_{di} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \qquad \text{(Equation 2)}$$

(vi) For each affected coating operation subject to § 60.742(b)(1) (emission reduction standard for coating operations), compliance is demonstrated if the product of (E)x(F) is equal to or greater than 0.90.

(2) *Gaseous emission test for coating operations using carbon adsorption beds with individual exhausts.* This method is applicable when emissions from any affected coating operation are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel. The owner or operator using this method shall comply with the following procedures:

(i) Construct the vapor capture system and control device so that each volumetric flow rate and the total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.745 (b) through (g);

(ii) Assure that all VOC emissions from the coating operation are segregated from other VOC sources and that the emissions can be captured for measurement, as described in § 60.743(a)(1)(ii) (A) and (B);

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency (H_v) of each individual adsorber vessel (v) using Equation 3:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}} \qquad \text{(Equation 3)}$$

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual adsorber vessel (v) using Equation 4:

$$H_{sys} = \frac{\sum_{v=1}^{g} H_v Q_{hv}}{\sum_{v=1}^{g} Q_{hv}} \qquad \text{(Equation 4)}$$

(vi) Determine the efficiency (F) of the vapor capture system using Equation (2).

(vii) For each affected coating operation subject to § 60.742(b)(1) (emission reduction standard for coating operations), compliance is demonstrated if the product of (H_{sys})x(F) is equal to or greater than 0.90.

(3) *Monthly liquid material balance.* This method can be used only when a VOC recovery device controls only those emissions from one affected coating operation. It may not be used if the VOC recovery device controls emissions from any other VOC emission sources. When demonstrating compliance by this method, § 60.8(f) (Performance Tests) of this part does not apply. The owner or operator using this method shall comply with the following procedures to determine the VOC emission reduction for each nominal 1-month period:

(i) Measure the amount of coating applied at the coating applicator. 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 appropriate adjustments shall be made to account for any ingredients added after the amount of coating has been determined;

(ii) Determine the VOC content of all coatings applied using the test method

specified in § 60.745(a). 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 appropriate adjustments shall be made to account for any ingredients added after the VOC content in the coating has been determined;

(iii) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of VOC recovered by the control device over each nominal 1-month period. The device shall be certified by the manufacturer to be accurate to within ±2.0 percent;

(iv) Measure the amount of VOC recovered; and

(v) Calculate the overall VOC emission reduction (R) for each and every nominal 1-month period using Equation 5. Emissions during startups and shutdowns are to be included when determining R because startups and shutdowns are part of normal operation for this source category.

$$R = \frac{M_r}{\sum_{i=1}^{n} [W_{oi} M_{ci} - RS_i]} \qquad \text{(Equation 5)}$$

If the value of R is equal to or greater than 0.90, compliance with § 60.742(b)(1) is demonstrated.

(A) The value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of RS_i that is greater than zero but less than or equal to 6 percent by weight of the liquid VOC applied:

(*1*) Measurement techniques; and

(*2*) Documentation that the measured value of RS_i exceeds zero but is less than or equal to 6 percent by weight of the liquid VOC applied.

(B) For those facilities not subject to paragraph (a)(3)(v)(A) of this section, the value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of RS_i that is greater than 6 percent by weight of the liquid VOC applied.

(*1*) Measurement techniques;

(*2*) Documentation that the measured value of RS_i exceeds 6 percent by weight of the liquid VOC applied; and

(*3*) Either documentation of customer specifications requiring higher values or documentation that the desired properties of the product make it necessary for RS_i to exceed 6 percent by weight of the liquid VOC applied and that such properties cannot be achieved by other means.

(C) The measurement techniques of paragraphs (a)(3)(v)(A)(*1*) and (a)(3)(v)(B)(*1*) of this section shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2).

(vi) The point at which M_r is to be measured shall be established when the compliance procedures are approved. The presumptive point of measurement shall be prior to separation/ purification; a point after separation/purification may be adopted for enhanced convenience or accuracy.

(4) *Short-term liquid material balance.* This method may be used as an alternative to the monthly liquid material balance described in paragraph (a)(3) of this section. The owner or operator using this method shall comply with the following procedures to determine VOC emission reduction for a 3- to 7-day period and shall continuously monitor VOC emissions as specified in § 60.744.

(i) Use the procedures described in paragraphs (a)(3) (i) through (vi) of this section to determine the overall emission reduction, R. Compliance is demonstrated if the value of R is equal to or greater than 0.90.

(ii) The number of days for the performance test (3 to 7) is to be based on the affected facility's representative performance consistent with the requirements of § 60.8(c). Data demonstrating that the chosen test period is representative shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2).

(b) Each owner or operator of an affected coating operation subject to the standard specified in § 60.742(b)(2) (alternative standard for coating operations) shall:

(1) Demonstrate that a total enclosure is installed. The total enclosure shall either be approved by the Administrator in accordance with the provisions of § 60.746, or meet the requirements in paragraphs (b)(1) (i) through (vi) of this section, as follows:

(i) The only openings in the enclosure are forced makeup air and exhaust ducts and natural draft openings such as those through which raw materials enter and exist the coating operation;

(ii) Total area of all natural draft openings does not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(iii) All access doors and windows are closed during normal operation of the enclosed coating operation, except for brief, occasional openings to accommodate process equipment adjustments. If such openings are frequent, or if the access door or window remains open for a significant amount of time during the process operation, it must be considered a natural draft opening. Access doors used routinely by workers to enter and exit the enclosed area shall be equipped with automatic closure devices;

(iv) Average inward face velocity (FV) across all natural draft openings is a minimum of 3,600 meters per hour as determined by the following procedures:

(A) Construct all forced makeup air ducts and all exhaust ducts so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in § 60.745 (c) and (d). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(B) Determine FV by Equation 6:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\ j} - \sum_{i=1}^{p} Q_{in\ i}}{\sum_{k=1}^{q} A_k} \qquad \text{(Equation 6)}$$

(v) The air passing through all natural draft openings flows into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward airflow 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 thourgh the natural draft openings shall be presumed to be inward at all times without verification.

(vi) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening.

(2) Determine the control device efficiency using Equation (1) or Equations (3) and (4), as applicable, and the test methods and procedures specified in § 60.745 (b) through (g).

(3) Compliance is demonstrated if the installation of a total enclosure is demonstrated and the value of E determined from Equation (1) or the value of

H_{sys} determined from Equations (3) and (4), as applicable, is equal to or greater than 0.95.

(c) To demonstrate compliance with § 60.742(c)(1) (standard for coating mix preparation equipment servicing a coating operation with concurrent construction of a control device that uses at least 130 Mg per year of VOC), each owner or operator of affected coating mix preparation equipment shall demonstrate that:

(1) Covers meeting the following specifications have been installed and are being used properly:

(i) Cover shall be 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 cover in place. Such activities shall be carried out through ports of the minimum practical size;

(ii) Cover shall extend at least 2 centimeters beyond the outer rim of the opening or shall be attached to the rim;

(iii) Cover shall be of such design and construction that contact is maintained between cover and rim along the entire perimeter;

(iv) Any breach in the cover (such as a slit for insertion of a mixer shaft or port for addition of ingredients) shall be covered consistent with paragraphs (c)(1) (i), (ii), and (iii) of this section when not actively in use. An opening sufficient to allow safe clearance for a mixer shaft is acceptable during those periods when the shaft is in place; and

(v) A polyehtylene or nonpermanent cover may be used provided it meets the requirements of paragraphs (c)(1) (ii), (iii), and (iv) of this section. Such a cover shall not be reused after once being removed.

(2) Procedures detailing the proper use of covers, as specified in paragraph (c)(1)(i) of this section, have been posted in all areas where affected coatings mix preparation equipment is used;

(3) The coating mix preparation equipment is vented to a control device while preparation of the coating is taking place within the vessel; and

(4) The control device efficiency (E or H_{sys}, as applicable) determined using Equation (1) or Equations (3) and (4), respectively, and the test methods and procedures specified in § 60.745 (b) through (g) is equal to or greater than 0.95.

(d) To demonstrate compliance with § 60.742(c)(2) (standard for coating mix preparation equipment servicing a coating operation that does not have concurrent construction of a control device but uses at least 130 Mg of VOC per year) or § 60.742(c)(3) (standard for coating mix preparation equipment servicing a coating operation that uses at least 95 Mg but less than 130 Mg of VOC per year), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(1) Covers satisfying the specifications in paragraphs (c)(1) (i) through (v) of this section have been installed and are being properly operated and maintained; and

(2) Procedures detailing the proper use of covers, as specified in paragraph (c)(1)(i) of this section, have been posted in all areas where affected coating mix preparation equipment is used.

(3) Owners or operators meeting the standard specified in § 60.742 (c)(2)(ii) or (c)(3)(ii) shall also demonstrate that the coating mix preparation equipment is vented to a control device.

(e) If a control device other than a carbon adsorber, condenser, or incinerator is used to control emissions from an affected facility, the necessary operating specifications for that device must be approved by the Administrator. An example of such a device is a flare.

§ 60.744 Monitoring requirements.

(a) Each owner or operator of an affected facility shall install and calibrate all monitoring devices required under the provisions of this section according to the manufacturer's specifications, prior to the initial performance test in locations such that representative values of the monitored parameters will be obtained. The parameters to be monitored shall be continuously measured and recorded during each performance test.

(b) Each owner or operator of an affected facility that uses less than 95 Mg of VOC per year and each owner or operator of an affected facility subject to

the provisions specified in § 60.742(c)(3) shall:

(1) Make semiannual estimates of the projected annual amount of VOC to be used for the manufacture of polymeric coated substrate at the affected coating operation in that year; and

(2) Maintain records of actual VOC use.

(c) Each owner or operator of an affected facility controlled by a carbon adsorption system and demonstrating compliance by the procedures described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall carry out the monitoring provisions of paragraph (c)(1) or (2) of this section, as appropriate.

(1) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in either the control device outlet gas stream or in both the control device inlet and outlet gas streams. The outlet gas stream shall be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.747(d)(1)(i). The inlet and outlet gas streams shall be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.747(d)(2)(i).

(2) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in the outlet gas stream for a minimum of one complete adsorption cycle per day for each adsorber vessel. The owner or operator may also monitor and record the concentration level of organic compounds in the common carbon adsorption system inlet gas stream or in each individual carbon adsorber vessel inlet stream. The outlet gas streams shall be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.747(d)(1)(ii). In this case, the owner or operator shall compute daily a 3-day rolling average concentration level of organics in the outlet gas stream from each individual adsorber vessel. The inlet and outlet gas streams shall be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.747(d)(2)(ii). In this case, the owner or operator shall compute daily a 3-day rolling average efficiency for each individual adsorber vessel.

(d) Each owner or operator of an affected facility controlled by a condensation system and demonstrating compliance by the test methods described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the temperature of the condenser exhaust stream.

(e) Each owner or operator of an affected facility controlled by a thermal incinerator and demonstrating compliance by the test methods described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion temperature of the incinerator. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(f) Each owner or operator of an affected facility controlled by a catalytic incinerator and demonstrating compliance by the test methods described in § 60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(g) Each owner or operator of an affected facility who demonstrates compliance by the test methods described in § 60.743(a)(1) or (2) (which include vapor capture system efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall submit a monitoring plan for the vapor capture system to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions. This plan shall identify the parameter to be monitored as an indicator of vapor capture system performance (e.g., the amperage to the exhaust fans or duct flow rates) and the method for monitoring the chosen parameter. The owner or operator shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the value of the chosen parameter.

(h) Each owner or operator of an affected facility who demonstrates compliance as described in § 60.743(b) shall follow the procedures described in paragraph (g) of this section to establish a monitoring system for the total enclosure.

(i) Each owner or operator of an affected facility shall record time periods of mixing or coating operations when the emission control device is malfunctioning or not in use.

(j) Each owner or operator of an affected facility shall record time periods of mixing or coating operations when each monitoring device is malfunctioning or not in use.

(k) Records of the measurements and calculations required in § 60.743 and § 60.744 must be retained for at least 2 years following the date of the measurements and calculations.

§ 60.745 Test methods and procedures.

Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance as follows:

(a) Method 24 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern. For Method 24, the coating sample must be a 1-liter sample collected in a 1-liter container at a point in the process where the sample will be representative of the coating applied to the 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 collected. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use Method 24 results.

(b) Method 25 shall be used to determine VOC concentrations from incinerator gas streams. Alternative Methods (18 or 25A), may be used as explained in the applicability section of Method 25 in cases where use of Method 25 is demonstrated to be technically infeasible. 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 § 60.8(d) of the General Provisions. Except as indicated in paragraphs (b)(1) and (b)(2) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(1) When the method 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 adsorber vessels pursuant to § 60.743 (a)(1), (b), or (c), the test shall consist of three separate runs, each coinciding with one or more complete system rotations through the adsorption cycles of all the individual adsorber vessels.

(2) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel pursuant to § 60.743 (a)(2), (b), or (c), each adsorber vessel shall be tested individually. Each test shall consist of three separate runs, each coinciding with one or more complete adsorption cycles.

(c) Method 1 or 1A is used for sample and velocity traverses;

(d) Method 2, 2A, 2C, or 2D is used for velocity and volumetric flow rates;

(e) Method 3 is used for gas analysis;

(f) Method 4 is used for stack gas moisture;

(g) Methods 2, 2A, 2C, or 2D; 3; and 4 shall be performed, as applicable, at least twice during each test run.

§ 60.746 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of VOC from any emission point subject to § 60.742(c) at least equivalent to that required by § 60.742(b)(2) or § 60.742(c), respectively, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means. The Administrator may condition permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as specified in § 60.742(b)(2) or § 60.742(c), respectively.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a public hearing.

(c) Any person seeking permission under this section shall submit to the Administrator either results from an emission test that accurately collects and measures all VOC emissions from a given control device or an engineering evaluation that accurately determines such emissions.

§ 60.747 Reporting and recordkeeping requirements.

(a) For each affected facility subject to the requirements of § 60.742(b) and (c), the owner or operator shall submit the performance test data and results to the Administrator as specified in § 60.8(a) of this part. In addition, the average values of the monitored parameters measured at least every 15 minutes and averaged over the period of the performance test shall be submitted with the results of all performance tests.

(b) Each owner or operator of an affected facility subject to the provisions specified in § 60.742(c)(3) and claiming to use less than 130 Mg of VOC in the first year of operation and each owner or operator of an affected facility claiming to use less than 95 Mg of VOC in the first year of operation shall submit to the Administrator, with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions, a material flow chart indicating projected VOC use. The owner or operator shall also submit actual VOC use records at the end of the initial year.

(c) Each owner or operator of an affected facility subject to the provisions of § 60.742(c)(3) and initially using less than 130 Mg of VOC per year and each owner or operator of an affected facility initially using less than 95 Mg of VOC per year shall:

(1) Record semiannual estimates of projected VOC use and actual 12-month VOC use;

(2) Report the first semiannual estimate in which projected annual VOC use exceeds the applicable cutoff; and

(3) Report the first 12-month period in which the actual VOC use exceeds the applicable cutoff.

(d) Each owner or operator of an affected facility demonstrating compliance by the methods described in § 60.743(a)(1), (2), (4), (b), or (c) shall maintain records and submit quarterly reports to the Administrator documenting the following:

(1) For those affected facilities monitoring only the carbon adsorption system outlet concentration levels of organic compounds, the periods (during actual coating operations) specified in paragraph (d)(1)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive system rotations through the adsorption cycles of all the individual adsorber vessels during which the average value of the concentration level of organic compounds in the common outlet gas stream is more than 20 percent greater than the average value measured during the most recent performance test that demonstrated compliance.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the concentration level of organic compounds in the individual outlet gas stream is more than 20 percent greater

than the average value for that adsorber vessel measured during the most recent performance test that demonstrated compliance.

(2) For those affected facilities monitoring both the carbon adsorption system inlet and outlet concentration levels of organic compounds, the periods (during actual coating operations), specified in paragraph (d)(2)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average carbon adsorption system efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.743(a)(1), the value of E determined using Equation (1) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance by the performance test described in § 60.743(a)(4), the average value of the system efficiency measured with the monitor during the most recent performance test that demonstrated compliance.

(C) For those affected facilities demonstrating compliance pursuant to § 60.743(b) or (c), 0.95.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel during which the average carbon adsorber vessel efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.743(a)(2), (b), or (c), the value of H_v determined using Equation (3) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance by the performance test described in § 60.743(a)(4), the average efficiency for that adsorber vessel measured with the monitor during the most recent performance test that demonstrated compliance.

(3) For those affected facilities monitoring condenser exhaust gas temperature, all 3-hour periods (during actual coating operations) during which the average exhaust temperature is 5 or more Celsius degrees above the average temperature measured during the most recent performance test that demonstrated compliance;

(4) For those affected facilities monitoring thermal incinerator combustion gas temperature, all 3-hour periods (during actual coating operations) during which the average combustion temperature of the device is more than 28 Celsius degrees below the average combustion temperature of the device during the most recent performance test that demonstrated compliance;

(5) For those affected facilities monitoring catalytic incinerator catalyst bed temperature, all 3-hour periods (during actual coating operations) during which the average gas temperature immediately before the catalyst bed is more than 28 Celsius degrees below the average gas temperature during the most recent performance test that demonstrated compliance and all 3-hour periods (during actual coating operations) during which the average gas temperature difference across the catalyst bed is less than 80 percent of the average gas temperature difference during the most recent performance test that demonstrated compliance;

(6) For each affected facility monitoring a total enclosure pursuant to § 60.744(h) or vapor capture system pursuant to § 60.744(g), all 3-hour periods (during actual coating operations) during which the average total enclosure or vapor capture system monitor readings vary by 5 percent or more from the average value measured during the most recent performance test that demonstrated compliance.

(7) Each owner or operator of an affected coating operation not required to submit reports under paragraphs (d)(1) through (6) of this section because no reportable periods have occurred shall submit semiannual statements clarifying this fact.

(e) Each owner or operator of an affected coating operation, demonstrating compliance by the test methods described in § 60.743(a)(3) (liquid-liquid material balance) shall submit the following:

(1) For months of compliance, semiannual reports to the Administrator stating that the affected coating operation was in compliance for each 1-month period; and

(2) For months of noncompliance, quarterly reports to the Administrator documenting the 1-month amount of VOC contained in the coatings, the 1-month amount of VOC recovered, and the percent emission reduction for each month.

(f) Each owner or operator of an affected coating operation, either by itself or with associated coating mix preparation equipment, shall submit the following with the reports required under paragraphs (d) and (e) of this section:

(1) All periods during actual mixing or coating operations when a required monitoring device (if any) was malfunctioning or not operating; and

(2) All periods during actual mixing or coating operations when the control device was malfunctioning or not operating.

(g) The reports required under paragraphs (b), (c), (d), and (e) of this section shall be postmarked within 30 days of the end of the reporting period.

(h) Records required in § 60.747 must be retained for at least 2 years.

(i) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In this event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

§ 60.748 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) 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: §§ 60.743(a)(3)(v) (A) and (B); 60.743(e); 60.745(a); 60.746.

Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

SOURCE: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

§ 60.750 Applicability, designation of affected facility, and delegation of authority.

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

(b) The following authorities shall be retained by the Administrator and not transferred to the State: § 60.754(a)(5).

(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§ 60.751 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

Closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under § 60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with § 60.752(b)(2)(i).

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under § 257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Modification means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or

on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§ 257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or *MSW landfill emissions* means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of § 60.754.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

Solid waste means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 *et seq.*).

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9262, Feb. 24, 1999]

§ 60.752 Standards for air emissions from municipal solid waste landfills.

(a) Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the Administrator as provided in § 60.757(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided for in paragraphs (a)(1) and (a)(2) of this section.

(1) The owner or operator shall submit to the Administrator an amended design capacity report, as provided for in § 60.757(a)(3).

(2) When an increase in the maximum design capacity of a landfill exempted from the provisions of § 60.752(b) through § 60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of paragraph (b) of this section.

(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in § 60.754. The NMOC emission rate shall be recalculated annually, except as provided in § 60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(1) If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:

(i) Submit an annual emission report to the Administrator, except as provided for in § 60.757(b)(1)(ii); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in § 60.754(a)(1) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.

(A) If the NMOC emission rate, upon recalculation required in paragraph (b)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system in compliance with paragraph (b)(2) of this section.

(B) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided for in § 60.757(d).

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.

(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§ 60.753 through 60.758 proposed by the owner or operator.

(C) The collection and control system design plan shall either conform with specifications for active collection systems in § 60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 60.759.

(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i) (A),(B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.

(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in § 60.757(c)(1) or (2).

(A) An active collection system shall:

(*1*) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;

(*2*) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:

(*i*) 5 years or more if active; or

(*ii*) 2 years or more if closed or at final grade.

(*3*) Collect gas at a sufficient extraction rate;

(*4*) Be designed to minimize off-site migration of subsurface gas.

(B) A passive collection system shall:

(*1*) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)(*1*), (*2*), and (2)(ii)(A)(*4*) of this section.

(*2*) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under § 258.40.

(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with § 60.18 except as noted in § 60.754(e);

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.754(d).

(*1*) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(*2*) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in § 60.756;

(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section.

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§ 60.753, 60.755 and 60.756.

(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in § 60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in § 60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in § 60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

(c) For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §§ 70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter, regardless of when the design capacity report is actually submitted, no later than:

(1) June 10, 1996 for MSW landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996;

(2) Ninety days after the date of commenced construction, modification, or reconstruction for MSW landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.753 Operational standards for collection and control systems.

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.752(b)(2)(ii) of this subpart shall:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade;

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in § 60.757(f)(1);

(2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;

(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by § 60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by § 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(ii) A data recorder is not required;

(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

(iv) A calibration error check is not required;

(v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with § 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in § 60.755(a)(3) through (5) or § 60.755(c) of this subpart. If corrective actions are taken as specified in § 60.755, the monitored exceedance is not a violation of the operational requirements in this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 61778, Oct. 17, 2000]

§ 60.754 Test methods and procedures.

(a)(1) The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(i) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for L_O, and 4,000 parts per million by volume as hexane for the C_{NMOC}. For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year.

(i) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^{n} 2\ k\ L_o M_i \left(e^{-kt} i\right)\left(C_{NMOC}\right)\left(3.6 \times 10^{-9}\right)$$

where,

M_{NMOC}=Total NMOC emission rate from the landfill, megagrams per year

k=methane generation rate constant, year^{-1}

L_o=methane generation potential, cubic meters per megagram solid waste

M_i=mass of solid waste in the ith section, megagrams

t_i=age of the ith section, years

C_{NMOC}=concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9}=conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained

(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_o\ R\ (e^{-kc} - e^{-kt})\ C_{NMOC}\ (3.6 \times 10^{-9})$$

Where:

M_{NMOC}=mass emission rate of NMOC, megagrams per year

L_o=methane generation potential, cubic meters per megagram solid waste

R=average annual acceptance rate, megagrams per year

k=methane generation rate constant, year^{-1}

t = age of landfill, years

C_{NMOC}=concentration of NMOC, parts per million by volume as hexane

c=time since closure, years; for active landfill c=O and $e^{-kc}1$

3.6×10 – 9=conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R, if documentation of the nature and amount of such wastes is maintained.

(2) *Tier 1.* The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in § 60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under § 60.752(b)(1).

(ii) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with

§ 60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in paragraph (a)(3) of this section.

(3) *Tier 2.* The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of appendix A of this part. Method 18 of appendix A of this part may be used to analyze the samples collected by the Method 25 or 25C sampling procedure. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If using Method 18, the owner or operator must identify all compounds in the sample and, as a minimum, test for those compounds published in the most recent Compilation of Air Pollutant Emission Factors (AP–42), minus carbon monoxide, hydrogen sulfide, and mercury. As a minimum, the instrument must be calibrated for each of the compounds on the list. Convert the concentration of each Method 18 compound to C_{NMOC} as hexane by multiplying by the ratio of its carbon atoms divided by six. If more than the required number of samples are taken, all samples must be used in the analysis. The landfill owner or operator must divide the NMOC concentration from Method 25 or 25C of appendix A of this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe before the gas moving or condensate removal equipment. For these systems, a minimum of three samples must be collected from the header pipe.

(i) The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in paragraph (a)(1) of this section.

(ii) If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with § 60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in paragraph (a)(4) of this section.

(iii) If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in § 60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.

(4) *Tier 3.* The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in paragraph (a)(1)(i) or (a)(1)(ii) of this section and

using a site-specific methane generation rate constant k, and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the owner or operator shall comply with § 60.752(b)(2).

(ii) If the NMOC mass emission rate is less than 50 megagrams per year, then the owner or operator shall submit a periodic emission rate report as provided in § 60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in § 60.757(b)(1) using the equations in paragraph (a)(1) of this section and using the site-specific methane generation rate constant and NMOC concentration obtained in paragraph (a)(3) of this section. The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.

(5) The owner or operator may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required in paragraphs (a)(3) and (a)(4) of this section if the method has been approved by the Administrator.

(b) After the installation of a collection and control system in compliance with § 60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in § 60.752(b)(2)(v), using the following equation:

$$M_{NMOC} = 1.89 \times 10^{-3}\ Q_{LFG}\ C_{NMOC}$$

where,

M_{NMOC} = mass emission rate of NMOC, megagrams per year

Q_{LFG} = flow rate of landfill gas, cubic meters per minute

C_{NMOC} = NMOC concentration, parts per million by volume as hexane

(1) The flow rate of landfill gas, Q_{LFG}, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.

(2) The average NMOC concentration, C_{NMOC}, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

(3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in §§ 51.166 or 52.21 of this chapter using AP–42 or other approved measurement procedures.

(d) For the performance test required in § 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by § 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18

of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (NMOC_{in} - NMOC_{out})/(NMOC_{in})$$

where,

$NMOC_{in}$ = mass of NMOC entering control device

$NMOC_{out}$ = mass of NMOC exiting control device

(e) For the performance test required in § 60.752(b)(2)(iii)(A), the net heating value of the combusted landfill gas as determined in § 60.18(f)(3) is calculated from the concentration of methane in the landfill gas as measured by Method 3C. A minimum of three 30-minute Method 3C samples are determined. The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under § 60.18(f)(4).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 65 FR 61778, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.755 Compliance provisions.

(a) Except as provided in § 60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with § 60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 60.752(b)(2)(ii)(A)(*1*), one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in § 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_o R (e^{-kc} - e^{-kt})$$

where,

Q_m = maximum expected gas generation flow rate, cubic meters per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, $year^{-1}$

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years

c = time since closure, years (for an active landfill c = O and $e^{-kc} = 1$)

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^{n} 2\,k\,L_o\,M_i\left(e^{-kt}i\right)$$

where,

Q_M=maximum expected gas generation flow rate, cubic meters per year

k=methane generation rate constant, $year^{-1}$

L_o=methane generation potential, cubic meters per megagram solid waste

M_i=mass of solid waste in the ith section, megagrams

t_i=age of the ith section, years

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs (a)(1) (i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1) (i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with § 60.752(b)(2)(ii)(A)(*2*),

the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 60.752(b)(2)(ii)(A)(*3*), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under § 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in § 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) An owner or operator seeking to demonstrate compliance with § 60.752(b)(2)(ii)(A)(*4*) through the use of a collection system not conforming to the specifications provided in § 60.759 shall provide information satisfactory to the Administrator as specified in § 60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with § 60.753(a), each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in § 60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in § 60.753(d).

(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the

exceedance is not a violation of the operational requirements of § 60.753(d).

(i) The location of each monitored exceedance shall be marked and the location recorded.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in paragraph (c)(4) (iii) or (v) shall be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that ''methane'' shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998]

§ 60.756 Monitoring of operations.

Except as provided in § 60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with § 60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in § 60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in § 60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in § 60.755(a)(5).

(b) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) using an enclosed combustor shall calibrate,

maintain, and operate according to the manufacturer's specifications, the following equipment.

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to or bypass of the control device. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) 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 that the gas flow is not diverted through the bypass line.

(c) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to or bypass of the flare. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) 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 that the gas flow is not diverted through the bypass line.

(d) Each owner or operator seeking to demonstrate compliance with § 60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Administrator as provided in § 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

(e) Each owner or operator seeking to install a collection system that does not meet the specifications in § 60.759 or seeking to monitor alternative parameters to those required by § 60.753 through § 60.756 shall provide information satisfactory to the Administrator as provided in § 60.752(b)(2)(i) (B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.

(f) Each owner or operator seeking to demonstrate compliance with § 60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in § 60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.757 Reporting requirements.

Except as provided in § 60.752(b)(2)(i)(B),

(a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.

(1) The initial design capacity report shall fulfill the requirements of the notification of the date construction is

commenced as required by § 60.7(a)(1) and shall be submitted no later than:

(i) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996 or

(ii) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(2) The initial design capacity report shall contain the following information:

(i) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the State, local, or tribal agency responsible for regulating the landfill.

(ii) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

(3) An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in § 60.758(f).

(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in § 60.754(a) or (b), as applicable.

(i) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(i)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.

(A) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or

(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to

the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(2) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with § 60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§ 60.753 and 60.755.

(c) Each owner or operator subject to the provisions of § 60.752(b)(2)(i) shall submit a collection and control system design plan to the Administrator within 1 year of the first report required under paragraph (b) of this section in which the emission rate equals or exceeds 50 megagrams per year, except as follows:

(1) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in § 60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.

(2) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in § 60.754(a)(4), and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of § 60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.

(d) Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under § 60.7(a)(4).

(e) Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;

(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and

(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in § 60.752(b)(2)(v) have been met.

(f) Each owner or operator of a landfill seeking to comply with § 60.752(b)(2) using an active collection system designed in accordance with § 60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance

test report required under § 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under § 60.758(c).

(1) Value and length of time for exceedance of applicable parameters monitored under § 60.756(a), (b), (c), and (d).

(2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under § 60.756.

(3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

(4) All periods when the collection system was not operating in excess of 5 days.

(5) The location of each exceedance of the 500 parts per million methane concentration as provided in § 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.

(6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of § 60.755.

(g) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) shall include the following information with the initial performance test report required under § 60.8:

(1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

(2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

(3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;

(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and

(5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

(6) The provisions for the control of off-site migration.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.758 Recordkeeping requirements.

(a) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of § 60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered § 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(ii):

(i) The maximum expected gas generation flow rate as calculated in § 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 60.759(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

(i) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in § 60.752(b)(2)(iii)(B) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii)(B)(*1*) through use of a boiler or process heater of any size: a description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in § 60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

(c) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in § 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that shall be recorded and reported under § 60.757(f):

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 oC below the average combustion temperature during the most recent performance test at which compliance with § 60.752(b)(2)(iii) was determined.

(ii) For boilers 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 paragraph (b)(3) of this section.

(2) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under § 60.756.

(3) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with § 60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under § 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the

system and providing a unique identification location label for each collector.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under § 60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in § 60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in § 60.759(a)(3)(ii).

(e) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in § 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of ''design capacity'', shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Offsite records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.759 Specifications for active collection systems.

(a) Each owner or operator seeking to comply with § 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in § 60.752(b)(2)(i)(C) and (D):

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under § 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$$Q_i = 2\ k\ L_o\ M_i\ (e^{-kt}\ i)\ (C_{NMOC})\ (3.6 \times 10^{-9})$$

where,

Q_i = NMOC emission rate from the ith section, megagrams per year

k = methane generation rate constant, $year^{-1}$

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of the degradable solid waste in the ith section, megagram

t_i = age of the solid waste in the ith section, years

C_{NMOC} = concentration of nonmethane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

(iii) The values for k and C_{NMOC} determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_O and C_{NMOC} provided in § 60.754(a)(1) or the alternative values from § 60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with § 60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with § 60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with § 60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

(2) For new collection systems, the maximum flow rate shall be in accordance with § 60.755(a)(1).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32753, June 16, 1998; 64 FR 9262, Feb. 24, 1999; 65 FR 18909, Apr. 10, 2000]

Subpart AAAA—Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001

SOURCE: 65 FR 76355, Dec. 6, 2000, unless otherwise noted.

INTRODUCTION

§ 60.1000 What does this subpart do?

This subpart establishes new source performance standards for new small municipal waste combustion units.

§ 60.1005 When does this subpart become effective?

This subpart takes effect June 6, 2001. Some of the requirements in this subpart apply to municipal waste combustion unit planning and must be completed before construction is commenced on the municipal waste combustion unit. In particular, the preconstruction requirements in §§ 60.1050 through 60.1150 must be completed prior to commencing construction. Other requirements (such as the emission limits) apply when the municipal waste combustion unit begins operation.

APPLICABILITY

§ 60.1010 Does this subpart apply to my municipal waste combustion unit?

Yes, if your municipal waste combustion unit meets two criteria:

(a) Your municipal waste combustion unit is a new municipal waste combustion unit.

(b) Your municipal waste combustion unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel.

§ 60.1015 What is a new municipal waste combustion unit?

(a) A new municipal waste combustion unit is a municipal waste combustion unit that meets either of two criteria:

(1) Commenced construction after August 30, 1999.

(2) Commenced reconstruction or modification after June 6, 2001.

(b) This subpart does not apply to your municipal waste combustion unit if you make physical or operational changes to an existing municipal waste combustion unit primarily to comply with the emission guidelines in subpart BBBB of this part. Such changes do not qualify as reconstruction or modification under this subpart.

§ 60.1020 Does this subpart allow any exemptions?

(a) *Small municipal waste combustion units that combust less than 11 tons per day.* You are exempt from this subpart if you meet four requirements:

(1) Your municipal waste combustion unit is subject to a federally enforceable permit limiting the amount of municipal solid waste combusted to less than 11 tons per day.

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with a copy of the federally enforceable permit.

(4) You keep daily records of the amount of municipal solid waste combusted.

(b) *Small power production facilities.* You are exempt from this subpart if you meet four requirements:

(1) Your unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit qualifies for the exemption.

(4) You provide the Administrator with documentation that the unit qualifies for the exemption.

(c) *Cogeneration facilities.* You are exempt from this subpart if you meet four requirements:

(1) Your unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial,

commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit qualifies for the exemption.

(4) You provide the Administrator with documentation that the unit qualifies for the exemption.

(d) *Municipal waste combustion units that combust only tires.* You are exempt from this subpart if you meet three requirements:

(1) Your municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can co-fire coal, fuel oil, natural gas, or other nonmunicipal solid waste).

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with documentation that the unit qualifies for the exemption.

(e) *Hazardous waste combustion units.* You are exempt from this subpart if you get a permit for your unit under section 3005 of the Solid Waste Disposal Act.

(f) *Materials recovery units.* You are exempt from this subpart if your unit combusts waste mainly to recover metals. Primary and secondary smelters qualify for the exemption.

(g) *Co-fired combustors.* You are exempt from this subpart if you meet four requirements:

(1) Your unit has a federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with a copy of the federally enforceable permit.

(4) You record the weights, each quarter, of municipal solid waste and of all other fuels combusted.

(h) *Plastics/rubber recycling units.* You are exempt from this subpart if you meet four requirements:

(1) Your pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit as defined under ''Definitions'' (§ 60.1465).

(2) You record the weights, each quarter, of plastics, rubber, and rubber tires processed.

(3) You record the weights, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries.

(4) You keep the name and address of the purchaser of those feed stocks.

(i) *Units that combust fuels made from products of plastics/rubber recycling plants.* You are exempt from this subpart if you meet two requirements:

(1) Your unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units.

(2) Your unit does not combust any other municipal solid waste.

(j) *Cement kilns.* You are exempt from this subpart if your cement kiln combusts municipal solid waste.

(k) *Air curtain incinerators.* If your air curtain incinerator (see § 60.1465 for definition) combusts 100 percent yard waste, you must meet only the requirements under ''Air Curtain Incinerators That Burn 100 Percent Yard Waste'' (§§ 60.1435 through 60.1455).

§ 60.1025 Do subpart E new source performance standards also apply to my municipal waste combustion unit?

If this subpart AAAA applies to your municipal waste combustion unit, then subpart E of this part does not apply to your municipal waste combustion unit.

§ 60.1030 Can the Administrator delegate authority to enforce these Federal new source performance standards to a State agency?

Yes, the Administrator can delegate all authorities in all sections of this subpart to the State for direct State enforcement.

§ 60.1035 How are these new source performance standards structured?

These new source performance standards contain five major components:

(a) Preconstruction requirements.

(1) Materials separation plan.

(2) Siting analysis.

(b) Good combustion practices.

(1) Operator training.

(2) Operator certification.

(3) Operating requirements.

(c) Emission limits.

(d) Monitoring and stack testing.

(e) Recordkeeping and reporting.

§ 60.1040 Do all five components of these new source performance standards apply at the same time?

No, you must meet the preconstruction requirements before you commence construction of the municipal waste combustion unit. After the municipal waste combustion unit begins operation, you must meet all of the good combustion practices, emission limits, monitoring, stack testing, and most recordkeeping and reporting requirements.

§ 60.1045 Are there different subcategories of small municipal waste combustion units within this subpart?

(a) Yes, this subpart subcategorizes small municipal waste combustion units into two groups based on the aggregate capacity of the municipal waste combustion plant as follows:

(1) *Class I Units.* Class I units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. (See the definition of ''municipal waste combustion plant capacity'' in § 60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.)

(2) *Class II Units.* Class II units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. (See the definition of ''municipal waste combustion plant capacity'' in § 60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.)

(b) The requirements for Class I and Class II units are identical except for two items:

(1) Class I units have a nitrogen oxides emission limit. Class II units do not have a nitrogen oxides emission limit (see table 1 of this subpart). Additionally, Class I units have continuous emission monitoring, recordkeeping, and reporting requirements for nitrogen oxides.

(2) Class II units are eligible for the reduced testing option provided in § 60.1305.

PRECONSTRUCTION REQUIREMENTS: MATERIALS SEPARATION PLAN

§ 60.1050 Who must submit a materials separation plan?

(a) You must prepare a materials separation plan for your municipal waste combustion unit if you commence construction of a new small municipal waste combustion unit after December 6, 2000.

(b) If you commence construction of your municipal waste combustion unit after August 30, 1999 but before December 6, 2000, you are not required to prepare the materials separation plan specified in this subpart.

(c) You must prepare a materials separation plan if you are required to submit an initial application for a construction permit, under 40 CFR part 51, subpart I, or part 52, as applicable, for the reconstruction or modification of your municipal waste combustion unit.

§ 60.1055 What is a materials separation plan?

The plan identifies a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling.

§ 60.1060 What steps must I complete for my materials separation plan?

(a) For your materials separation plan, you must complete nine steps:

(1) Prepare a draft materials separation plan.

(2) Make your draft plan available to the public.

(3) Hold a public meeting on your draft plan.

(4) Prepare responses to public comments received during the public comment period on your draft plan.

(5) Prepare a revised materials separation plan.

(6) Discuss the revised plan at the public meeting for review of the siting analysis.

(7) Prepare responses to public comments received on your revised plan.

(8) Prepare a final materials separation plan.

(9) Submit the final materials separation plan.

(b) You may use analyses conducted under the requirements of 40 CFR part 51, subpart I, or part 52, to comply with some of the materials separation requirements of this subpart.

§ 60.1065 What must I include in my draft materials separation plan?

(a) You must prepare and submit a draft materials separation plan for your municipal waste combustion unit and its service area.

(b) Your draft materials separation plan must identify a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling. A materials separation plan may include such elements as dropoff facilities, buy-back or deposit-return incentives, programs for curbside pickup, and centralized systems for mechanical separation.

(c) Your materials separation plan may include different goals or approaches for different subareas in the service area.

(d) Your materials separation plan may exclude materials separation activities for certain subareas or, if warranted, the entire service area.

§ 60.1070 How do I make my draft materials separation plan available to the public?

(a) Distribute your draft materials separation plan to the main public libraries in the area where you will construct the municipal waste combustion unit.

(b) Publish a notice of a public meeting in the main newspapers that serve two areas:

(1) The area where you will construct the municipal waste combustion unit.

(2) The areas where the waste that your municipal waste combustion unit combusts will be collected.

(c) Include six items in your notice of the public meeting:

(1) The date of the public meeting.

(2) The time of the public meeting.

(3) The location of the public meeting.

(4) The location of the public libraries where the public can find your materials separation plan. Include the normal business hours of each library.

(5) An agenda of the topics that will be discussed at the public meeting.

(6) The beginning and ending dates of the public comment period on your draft materials separation plan.

§ 60.1075 When must I accept comments on the materials separation plan?

(a) You must accept verbal comments at the public meeting.

(b) You must accept written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

§ 60.1080 Where and when must I hold a public meeting on my draft materials separation plan?

(a) You must hold a public meeting and accept comments on your draft materials separation plan.

(b) You must hold the public meeting in the county where you will construct the municipal waste combustion unit.

(c) You must schedule the public meeting to occur at least 30 days after you make your draft materials separation plan available to the public.

(d) You may combine the public meeting with any other public meeting required as part of any other Federal, State, or local permit review. However, you may not combine it with the public meeting required for the siting analysis under ''Preconstruction Requirements: Siting Analysis'' (§ 60.1140).

(e) You are encouraged to address eight topics at the public meeting for your draft materials separation plan:

(1) Expected size of the service area for your municipal waste combustion unit.

(2) Amount of waste you will collect in the service area.

(3) Types and estimated amounts of materials proposed for separation.

(4) Methods proposed for materials separation.

(5) Amount of residual waste for disposal.

(6) Alternate disposal methods for handling the residual waste.

(7) Where your responses to public comments on the draft materials separation plan will be available for inspection.

(8) Where your revised materials separation plan will be available for inspection.

(f) You must prepare a transcript of the public meeting on your draft materials separation plan.

§ 60.1085 What must I do with any public comments I receive during the public comment period on my draft materials separation plan?

You must do three steps:

(a) Prepare written responses to any public comments you received during the public comment period. Summarize the responses to public comments in a document that is separate from your revised materials separation plan.

(b) Make the comment response document available to the public in the service area where you will construct your municipal waste combustion unit. You must distribute the document at least to the main public libraries used to announce the public meeting.

(c) Prepare a revised materials separation plan for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments you received during the public comment period.

§ 60.1090 What must I do with my revised materials separation plan?

You must do two tasks:

(a) As specified under ''Reporting'' (§ 60.1375), submit five items to the Administrator by the date you submit the application for a construction permit under 40 CFR part 51, subpart I, or part 52. (If you are not required to submit an application for a construction permit under 40 CFR part 51, subpart I, or part 52, submit five items to the Administrator by the date of your notice of construction under § 60.1380):

(1) Your draft materials separation plan.

(2) Your revised materials separation plan.

(3) Your notice of the public meeting for your draft materials separation plan.

(4) A transcript of the public meeting on your draft materials separation plan.

(5) The document that summarizes your responses to the public comments you received during the public comment period on your draft materials separation plan.

(b) Make your revised materials separation plan available to the public as part of the siting analysis procedures under ''Preconstruction Requirements: Siting Analysis'' (§ 60.1130).

§ 60.1095 What must I include in the public meeting on my revised materials separation plan?

As part of the public meeting for review of the siting analysis, as specified under ''Preconstruction Requirements: Siting Analysis'' (§ 60.1140), you must discuss two areas:

(a) Differences between your revised materials separation plan and your draft materials separation plan discussed at the first public meeting (§ 60.1080).

(b) Questions about your revised materials separation plan.

§ 60.1100 What must I do with any public comments I receive on my revised materials separation plan?

(a) Prepare written responses to any public comments and include them in the document that summarizes your responses to public comments on the siting analysis.

(b) Prepare a final materials separation plan that includes, as appropriate, changes made in response to any public comments you received on your revised materials separation plan.

§ 60.1105 How do I submit my final materials separation plan?

As specified under ''Reporting'' (§ 60.1380), submit your final materials separation plan to the Administrator as part of the notice of construction for the municipal waste combustion unit.

PRECONSTRUCTION REQUIREMENTS: SITING ANALYSIS

§ 60.1110 Who must submit a siting analysis?

(a) You must prepare a siting analysis if you commence construction of a small municipal waste combustion unit after December 6, 2000.

(b) If you commence construction on your municipal waste combustion unit

after August 30, 1999, but before December 6, 2000, you are not required to prepare the siting analysis specified in this subpart.

(c) You must prepare a siting analysis if you are required to submit an initial application for a construction permit, under 40 CFR part 51, subpart I, or part 52, as applicable, for the reconstruction or modification of your municipal waste combustion unit.

§ 60.1115 What is a siting analysis?

The siting analysis addresses how your municipal waste combustion unit affects ambient air quality, visibility, soils, vegetation, and other relevant factors. The analysis can be used to determine whether the benefits of your proposed facility significantly outweigh the environmental and social costs resulting from its location and construction. The analysis must also consider other major industrial facilities near the proposed site.

§ 60.1120 What steps must I complete for my siting analysis?

(a) For your siting analysis, you must complete five steps:

(1) Prepare an analysis.

(2) Make your analysis available to the public.

(3) Hold a public meeting on your analysis.

(4) Prepare responses to public comments received on your analysis.

(5) Submit your analysis.

(b) You may use analyses conducted under the requirements of 40 CFR part 51, subpart I, or part 52, to comply with some of the siting analysis requirements of this subpart.

§ 60.1125 What must I include in my siting analysis?

(a) Include an analysis of how your municipal waste combustion unit affects four areas:

(1) Ambient air quality.

(2) Visibility.

(3) Soils.

(4) Vegetation.

(b) Include an analysis of alternatives for controlling air pollution that minimize potential risks to the public health and the environment.

§ 60.1130 How do I make my siting analysis available to the public?

(a) Distribute your siting analysis and revised materials separation plan to the main public libraries in the area where you will construct your municipal waste combustion unit.

(b) Publish a notice of a public meeting in the main newspapers that serve two areas:

(1) The area where you will construct your municipal waste combustion unit.

(2) The areas where the waste that your municipal waste combustion unit combusts will be collected.

(c) Include six items in your notice of the public meeting:

(1) The date of the public meeting.

(2) The time of the public meeting.

(3) The location of the public meeting.

(4) The location of the public libraries where the public can find your siting analysis and revised materials separation plan. Include the normal business hours of each library.

(5) An agenda of the topics that will be discussed at the public meeting.

(6) The beginning and ending dates of the public comment period on your siting analysis and revised materials separation plan.

§ 60.1135 When must I accept comments on the siting analysis and revised materials separation plan?

(a) You must accept verbal comments at the public meeting.

(b) You must accept written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

§ 60.1140 Where and when must I hold a public meeting on the siting analysis?

(a) You must hold a public meeting to discuss and accept comments on your siting analysis and your revised materials separation plan.

(b) You must hold the public meeting in the county where you will construct your municipal waste combustion unit.

(c) You must schedule the public meeting to occur at least 30 days after

you make your siting analysis and revised materials separation plan available to the public.

(d) You must prepare a transcript of the public meeting on your siting analysis.

§ 60.1145 What must I do with any public comments I receive during the public comment period on my siting analysis?

You must do three things:

(a) Prepare written responses to any public comments on your siting analysis and the revised materials separation plan you received during the public comment period. Summarize the responses to public comments in a document that is separate from your materials separation plan and siting analysis.

(b) Make the comment response document available to the public in the service area where you will construct your municipal waste combustion unit. You must distribute the document at least to the main public libraries used to announce the public meeting for the siting analysis.

(c) Prepare a revised siting analysis for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments you received during the public comment period.

§ 60.1150 How do I submit my siting analysis?

As specified under ''Reporting'' (§ 60.1380), submit four items as part of the notice of construction:

(a) Your siting analysis.

(b) Your notice of the public meeting on your siting analysis.

(c) A transcript of the public meeting on your siting analysis.

(d) The document that summarizes your responses to the public comments you received during the public comment period.

GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

§ 60.1155 What types of training must I do?

There are two types of required training:

(a) Training of operators of municipal waste combustion units using the U.S. Environmental Protection Agency (EPA) or a State-approved training course.

(b) Training of plant personnel using a plant-specific training course.

§ 60.1160 Who must complete the operator training course? By when?

(a) Three types of employees must complete the EPA or State-approved operator training course:

(1) Chief facility operators.

(2) Shift supervisors.

(3) Control room operators.

(b) Those employees must complete the operator training course by the later of three dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

§ 60.1165 Who must complete the plant-specific training course?

All employees with responsibilities that affect how a municipal waste combustion unit operates must complete the plant-specific training course. Include at least six types of employees:

(a) Chief facility operators.

(b) Shift supervisors.

(c) Control room operators.

(d) Ash handlers.

(e) Maintenance personnel.

(f) Crane or load handlers.

§ 60.1170 What plant-specific training must I provide?

For plant-specific training, you must do four things:

(a) For training at a particular plant, develop a specific operating manual for that plant by the later of two dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(b) Establish a program to review the plant-specific operating manual with people whose responsibilities affect the operation of your municipal waste combustion unit. Complete the initial review by the later of three dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

(c) Update your manual annually.

(d) Review your manual with staff annually.

§ 60.1175 What information must I include in the plant-specific operating manual?

You must include 11 items in the operating manual for your plant:

(a) A summary of all applicable requirements in this subpart.

(b) A description of the basic combustion principles that apply to municipal waste combustion units.

(c) Procedures for receiving, handling, and feeding municipal solid waste.

(d) Procedures to be followed during periods of startup, shutdown, and malfunction of the municipal waste combustion unit.

(e) Procedures for maintaining a proper level of combustion air supply.

(f) Procedures for operating the municipal waste combustion unit in compliance with the requirements contained in this subpart.

(g) Procedures for responding to periodic upset or off-specification conditions.

(h) Procedures for minimizing carryover of particulate matter.

(i) Procedures for handling ash.

(j) Procedures for monitoring emissions from the municipal waste combustion unit.

(k) Procedures for recordkeeping and reporting.

§ 60.1180 Where must I keep the plant-specific operating manual?

You must keep your operating manual in an easily accessible location at your plant. It must be available for review or inspection by all employees who must review it and by the Administrator.

GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

§ 60.1185 What types of operator certification must the chief facility operator and shift supervisor obtain and by when must they obtain it?

(a) Each chief facility operator and shift supervisor must obtain and keep a current provisional operator certification from the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in § 60.17(h)(1)) or a current provisional operator certification from your State certification program.

(b) Each chief facility operator and shift supervisor must obtain a provisional certification by the later of three dates:

(1) Six months after the municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

(c) Each chief facility operator and shift supervisor must take one of three actions:

(1) Obtain a full certification from the American Society of Mechanical Engineers or a State certification program in your State.

(2) Schedule a full certification exam with the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in § 60.17(h)(1)).

(3) Schedule a full certification exam with your State certification program.

(d) The chief facility operator and shift supervisor must obtain the full certification or be scheduled to take the certification exam by the later of three dates:

(1) Six months after the municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

§ 60.1190 After the required date for operator certification, who may operate the municipal waste combustion unit?

After the required date for full or provisional certifications, you must not operate your municipal waste combustion unit unless one of four employees is on duty:

(a) A fully certified chief facility operator.

(b) A provisionally certified chief facility operator who is scheduled to take the full certification exam.

(c) A fully certified shift supervisor.

(d) A provisionally certified shift supervisor who is scheduled to take the full certification exam.

§ 60.1195 What if all the certified operators must be temporarily offsite?

If the certified chief facility operator and certified shift supervisor both are unavailable, a provisionally certified control room operator at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, you must meet one of three criteria:

(a) When the certified chief facility operator and certified shift supervisor are both offsite for 12 hours or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator.

(b) When the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must record the period when the certified chief facility operator and certified shift supervisor are offsite and include that information in the annual report as specified under § 60.1410(l).

(c) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must take two actions:

(1) Notify the Administrator in writing. In the notice, state what caused the absence and what you are doing to ensure that a certified chief facility operator or certified shift supervisor is onsite.

(2) Submit a status report and corrective action summary to the Administrator every 4 weeks following the initial notification. If the Administrator notifies you that your status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.

GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

§ 60.1200 What are the operating practice requirements for my municipal waste combustion unit?

(a) You must not operate your municipal waste combustion unit at loads greater than 110 percent of the maximum demonstrated load of the municipal waste combustion unit (4-hour block average), as specified under ''Definitions'' (§ 60.1465).

(b) You must not operate your municipal waste combustion unit so that the temperature at the inlet of the particulate matter control device exceeds 17 °C above the maximum demonstrated temperature of the particulate matter control device (4-hour block average), as specified under ''Definitions'' (§ 60.1465).

(c) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must maintain an 8-hour block average carbon feed rate at or above the highest average level established during the most recent dioxins/furans or mercury test.

(d) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must evaluate total carbon usage for each calendar quarter. The total amount of carbon purchased and

delivered to your municipal waste combustion plant must be at or above the required quarterly usage of carbon. At your option, you may choose to evaluate required quarterly carbon usage on a municipal waste combustion unit basis for each individual municipal waste combustion unit at your plant. Calculate the required quarterly usage of carbon using equation 4 or 5 in § 60.1460(f).

(e) Your municipal waste combustion unit is exempt from limits on load level, temperature at the inlet of the particulate matter control device, and carbon feed rate during any of five situations:

(1) During your annual tests for dioxins/furans.

(2) During your annual mercury tests (for carbon feed rate requirements only).

(3) During the 2 weeks preceding your annual tests for dioxins/furans.

(4) During the 2 weeks preceding your annual mercury tests (for carbon feed rate requirements only).

(5) Whenever the Administrator or delegated State authority permits you to do any of five activities:

(i) Evaluate system performance.

(ii) Test new technology or control technologies.

(iii) Perform diagnostic testing.

(iv) Perform other activities to improve the performance of your municipal waste combustion unit.

(v) Perform other activities to advance the state of the art for emission controls for your municipal waste combustion unit.

§ 60.1205 What happens to the operating requirements during periods of startup, shutdown, and malfunction?

(a) The operating requirements of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

EMISSION LIMITS

§ 60.1210 What pollutants are regulated by this subpart?

Eleven pollutants, in four groupings, are regulated:

(a) *Organics*. Dioxins/furans.

(b) *Metals*. (1) Cadmium.

(2) Lead.

(3) Mercury.

(4) Opacity.

(5) Particulate matter.

(c) *Acid gases*. (1) Hydrogen chloride.

(2) Nitrogen oxides.

(3) Sulfur dioxide.

(d) *Other*. (1) Carbon monoxide.

(2) Fugitive ash.

§ 60.1215 What emission limits must I meet? By when?

You must meet the emission limits specified in tables 1 and 2 of this subpart. You must meet the limits 60 days after your municipal waste combustion unit reaches the maximum load level but no later than 180 days after its initial startup.

§ 60.1220 What happens to the emission limits during periods of startup, shutdown, and malfunction?

(a) The emission limits of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

(c) A maximum of 3 hours of test data can be dismissed from compliance calculations during periods of startup, shutdown, or malfunction.

(d) During startup, shutdown, or malfunction periods longer than 3 hours, emissions data cannot be discarded from compliance calculations and all provisions under § 60.11(d) apply.

CONTINUOUS EMISSION MONITORING

§ 60.1225 What types of continuous emission monitoring must I perform?

To continuously monitor emissions, you must perform four tasks:

(a) Install continuous emission monitoring systems for certain gaseous pollutants.

(b) Make sure your continuous emission monitoring systems are operating correctly.

(c) Make sure you obtain the minimum amount of monitoring data.

(d) Install a continuous opacity monitoring system.

§ 60.1230 What continuous emission monitoring systems must I install for gaseous pollutants?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for oxygen (or carbon dioxide), sulfur dioxide, and carbon monoxide. If you operate a Class I municipal waste combustion unit, you must also install, calibrate, maintain, and operate a continuous emission monitoring system for nitrogen oxides. Install the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and oxygen (or carbon dioxide) at the outlet of the air pollution control device.

(b) You must install, evaluate, and operate each continuous emission monitoring system according to the ''Monitoring Requirements'' in § 60.13.

(c) You must monitor the oxygen (or carbon dioxide) concentration at each location where you monitor sulfur dioxide and carbon monoxide. Additionally, if you operate a Class I municipal waste combustion unit, you must also monitor the oxygen (or carbon dioxide) concentration at the location where you monitor nitrogen oxides.

(d) You may choose to monitor carbon dioxide instead of oxygen as a diluent gas. If you choose to monitor carbon dioxide, then an oxygen monitor is not required, and you must follow the requirements in § 60.1255.

(e) If you choose to demonstrate compliance by monitoring the percent reduction of sulfur dioxide, you must also install continuous emission monitoring systems for sulfur dioxide and oxygen (or carbon dioxide) at the inlet of the air pollution control device.

(f) If you prefer to use an alternative sulfur dioxide monitoring method, such as parametric monitoring, or cannot monitor emissions at the inlet of the air pollution control device to determine percent reduction, you can apply to the Administrator for approval to use an alternative monitoring method under § 60.13(i).

§ 60.1235 How are the data from the continuous emission monitoring systems used?

You must use data from the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and carbon monoxide to demonstrate continuous compliance with the emission limits specified in tables 1 and 2 of this subpart. To demonstrate compliance for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, see § 60.1290.

§ 60.1240 How do I make sure my continuous emission monitoring systems are operating correctly?

(a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure oxygen (or carbon dioxide), sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide.

(b) Complete your initial evaluation of the continuous emission monitoring systems within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

(c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your oxygen (or carbon dioxide) continuous emission monitoring system, your sulfur dioxide, nitrogen oxides, or carbon monoxide continuous emission monitoring systems, as appropriate, and the appropriate test methods specified in table 3 of this subpart. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. table 4 of this subpart shows the performance specifications that apply to each continuous emission monitoring system.

(d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

§ 60.1245 Am I exempt from any appendix B or appendix F requirements to evaluate continuous emission monitoring systems?

Yes, the accuracy tests for your sulfur dioxide continuous emission monitoring system require you to also evaluate your oxygen (or carbon dioxide) continuous emission monitoring system. Therefore, your oxygen (or carbon dioxide) continuous emission monitoring system is exempt from two requirements:

(a) Section 2.3 of Performance Specification 3 in appendix B of this part (relative accuracy requirement).

(b) Section 5.1.1 of appendix F of this part (relative accuracy test audit).

§ 60.1250 What is my schedule for evaluating continuous emission monitoring systems?

(a) Conduct annual evaluations of your continuous emission monitoring systems no more than 13 months after the previous evaluation was conducted.

(b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.1255 What must I do if I choose to monitor carbon dioxide instead of oxygen as a diluent gas?

You must establish the relationship between oxygen and carbon dioxide during the initial evaluation of your continuous emission monitoring systems. You may reestablish the relationship during annual evaluations. To establish the relationship use three procedures:

(a) Use EPA Reference Method 3A or 3B in appendix A of this part to determine oxygen concentration at the location of your carbon dioxide monitor.

(b) Conduct at least three test runs for oxygen. Make sure each test run represents a 1-hour average and that sampling continues for at least 30 minutes in each hour.

(c) Use the fuel-factor equation in EPA Reference Method 3B in appendix A of this part to determine the relationship between oxygen and carbon dioxide.

§ 60.1260 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems and is the data collection requirement enforceable?

(a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for sulfur dioxide, nitrogen oxides, and carbon monoxide are in parts per million by dry volume at 7 percent oxygen (or the equivalent carbon dioxide level). Use the 1-hour averages of oxygen (or carbon dioxide) data from your continuous emission monitoring system to determine the actual oxygen (or carbon dioxide) level and to calculate emissions at 7 percent oxygen (or the equivalent carbon dioxide level).

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

(c) Obtain valid 1-hour averages for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement regardless of the emission level monitored, and you must notify the Administrator according to § 60.1410(e).

(e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations and percent reductions in accordance with § 60.1265.

§ 60.1265 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?

(a) Use the equation in § 60.1460(a) to calculate emissions at 7 percent oxygen.

(b) Use EPA Reference Method 19 in appendix A of this part, section 4.3, to calculate the daily geometric average

concentrations of sulfur dioxide emissions. If you are monitoring the percent reduction of sulfur dioxide, use EPA Reference Method 19 in appendix A of this part, section 5.4, to determine the daily geometric average percent reduction of potential sulfur dioxide emissions.

(c) If you operate a Class I municipal waste combustion unit, use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the daily arithmetic average for concentrations of nitrogen oxides.

(d) Use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the 4-hour or 24-hour daily block averages (as applicable) for concentrations of carbon monoxide.

§ 60.1270 What is required for my continuous opacity monitoring system and how are the data used?

(a) Install, calibrate, maintain, and operate a continuous opacity monitoring system.

(b) Install, evaluate, and operate each continuous opacity monitoring system according to § 60.13.

(c) Complete an initial evaluation of your continuous opacity monitoring system according to Performance Specification 1 in appendix B of this part. Complete the evaluation within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no more than 180 days after its initial startup.

(d) Complete each annual evaluation of your continuous opacity monitoring system no more than 13 months after the previous evaluation.

(e) Use tests conducted according to EPA Reference Method 9 in appendix A of this part, as specified in § 60.1300, to determine compliance with the opacity limit in table 1 of this subpart. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the opacity limit.

§ 60.1275 What additional requirements must I meet for the operation of my continuous emission monitoring systems and continuous opacity monitoring system?

Use the required span values and applicable performance specifications in table 4 of this subpart.

§ 60.1280 What must I do if any of my continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements?

Refer to table 4 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

STACK TESTING

§ 60.1285 What types of stack tests must I conduct?

Conduct initial and annual stack tests to measure the emission levels of dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

§ 60.1290 How are the stack test data used?

You must use results of stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash to demonstrate compliance with the emission limits in table 1 of this subpart. To demonstrate compliance for carbon monoxide, nitrogen oxides, and sulfur dioxide, see § 60.1235.

§ 60.1295 What schedule must I follow for the stack testing?

(a) Conduct initial stack tests for the pollutants listed in § 60.1285 within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

(b) Conduct annual stack tests for the same pollutants after the initial stack test. Conduct each annual stack test no later than 13 months after the previous stack test.

§ 60.1300 What test methods must I use to stack test?

(a) Follow table 5 of this subpart to establish the sampling location and to determine pollutant concentrations, number of traverse points, individual test methods, and other specific testing requirements for the different pollutants.

(b) Make sure that stack tests for all the pollutants consist of at least three test runs, as specified in §60.8. Use the average of the pollutant emission concentrations from the three test runs to determine compliance with the emission limits in table 1 of this subpart.

(c) Obtain an oxygen (or carbon dioxide) measurement at the same time as your pollutant measurements to determine diluent gas levels, as specified in §60.1230.

(d) Use the equations in §60.1460(a) to calculate emission levels at 7 percent oxygen (or an equivalent carbon dioxide basis), the percent reduction in potential hydrogen chloride emissions, and the reduction efficiency for mercury emissions. See the individual test methods in table 5 of this subpart for other required equations.

(e) You can apply to the Administrator for approval under §60.8(b) to use a reference method with minor changes in methodology, use an equivalent method, use an alternative method the results of which the Administrator has determined are adequate for demonstrating compliance, waive the requirement for a performance test because you have demonstrated by other means that you are in compliance, or use a shorter sampling time or smaller sampling volume.

§60.1305 May I conduct stack testing less often?

(a) You may test less often if you own or operate a Class II municipal waste combustion unit and if all stack tests for a given pollutant over 3 consecutive years show you comply with the emission limit. In that case, you are not required to conduct a stack test for that pollutant for the next 2 years. However, you must conduct another stack test within 36 months of the anniversary date of the third consecutive stack test that shows you comply with the emission limit. Thereafter, you must perform stack tests every 3rd year but no later than 36 months following the previous stack tests. If a stack test shows noncompliance with an emission limit, you must conduct annual stack tests for that pollutant until all stack tests over 3 consecutive years show compliance with the emission limit for that pollutant. The provision applies to all pollutants subject to stack testing requirements: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

(b) You can test less often for dioxins/furans emissions if you own or operate a municipal waste combustion plant that meets two conditions. First, you have multiple municipal waste combustion units onsite that are subject to this subpart. Second, all those municipal waste combustion units have demonstrated levels of dioxins/furans emissions less than or equal to 7 nanograms per dry standard cubic meter (total mass) for 2 consecutive years. In that case, you may choose to conduct annual stack tests on only one municipal waste combustion unit per year at your plant. The provision only applies to stack testing for dioxins/furans emissions.

(1) Conduct the stack test no more than 13 months following a stack test on any municipal waste combustion unit subject to this subpart at your plant. Each year, test a different municipal waste combustion unit subject to this subpart and test all municipal waste combustion units subject to this subpart in a sequence that you determine. Once you determine a testing sequence, it must not be changed without approval by the Administrator.

(2) If each annual stack test shows levels of dioxins/furans emissions less than or equal to 7 nanograms per dry standard cubic meter (total mass), you may continue stack tests on only one municipal waste combustion unit subject to this subpart per year.

(3) If any annual stack test indicates levels of dioxins/furans emissions greater than 7 nanograms per dry standard cubic meter (total mass), conduct subsequent annual stack tests on all municipal waste combustion units subject to this subpart at your plant. You may return to testing one municipal waste combustion unit subject to this subpart per year if you can demonstrate dioxins/furans emission levels less than or equal to 7 nanograms per dry standard cubic meter (total mass) for all municipal waste combustion units at your plant subject to this subpart for 2 consecutive years.

§ 60.1310 May I deviate from the 13-month testing schedule if unforeseen circumstances arise?

You may not deviate from the 13-month testing schedules specified in §§ 60.1295(b) and 60.1305(b)(1) unless you apply to the Administrator for an alternative schedule, and the Administrator approves your request for alternate scheduling prior to the date on which you would otherwise have been required to conduct the next stack test.

OTHER MONITORING REQUIREMENTS

§ 60.1315 Must I meet other requirements for continuous monitoring?

You must also monitor three operating parameters:

(a) Load level of each municipal waste combustion unit.

(b) Temperature of flue gases at the inlet of your particulate matter air pollution control device.

(c) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

§ 60.1320 How do I monitor the load of my municipal waste combustion unit?

(a) If your municipal waste combustion unit generates steam, you must install, calibrate, maintain, and operate a steam flowmeter or a feed water flowmeter and meet five requirements:

(1) Continuously measure and record the measurements of steam (or feed water) in kilograms (or pounds) per hour.

(2) Calculate your steam (or feed water) flow in 4-hour block averages.

(3) Calculate the steam (or feed water) flow rate using the method in ''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991),'' section 4 (incorporated by reference in § 60.17(h)(2)).

(4) Design, construct, install, calibrate, and use nozzles or orifices for flow rate measurements, using the recommendations in ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, part II of Fluid Meters,'' 6th Edition (1971), chapter 4 (incorporated by reference in § 60.17(h)(3)).

(5) Before each dioxins/furans stack test, or at least once a year, calibrate all signal conversion elements associated with steam (or feed water) flow measurements according to the manufacturer instructions.

(b) If your municipal waste combustion unit does not generate steam, or, if your municipal waste combustion units have shared steam systems and steam load cannot be estimated per unit, you must determine, to the satisfaction of the Administrator, one or more operating parameters that can be used to continuously estimate load level (for example, the feed rate of municipal solid waste or refuse-derived fuel). You must continuously monitor the selected parameters.

§ 60.1325 How do I monitor the temperature of flue gases at the inlet of my particulate matter control device?

You must install, calibrate, maintain, and operate a device to continuously measure the temperature of the flue gas stream at the inlet of each particulate matter control device.

§ 60.1330 How do I monitor the injection rate of activated carbon?

If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must meet three requirements:

(a) Select a carbon injection system operating parameter that can be used to calculate carbon feed rate (for example, screw feeder speed).

(b) During each dioxins/furans and mercury stack test, determine the average carbon feed rate in kilograms (or pounds) per hour. Also, determine the average operating parameter level that correlates to the carbon feed rate. Establish a relationship between the operating parameter and the carbon feed rate in order to calculate the carbon feed rate based on the operating parameter level.

(c) Continuously monitor the selected operating parameter during all periods when the municipal waste combustion unit is operating and combusting waste, and calculate the 8-hour

block average carbon feed rate in kilograms (or pounds) per hour, based on the selected operating parameter. When calculating the 8-hour block average, do two things:

(1) Exclude hours when the municipal waste combustion unit is not operating.

(2) Include hours when the municipal waste combustion unit is operating but the carbon feed system is not working correctly.

§ 60.1335 What is the minimum amount of monitoring data I must collect with my continuous parameter monitoring systems and is the data collection requirement enforceable?

(a) Where continuous parameter monitoring systems are used, obtain 1-hour arithmetic averages for three parameters:

(1) Load level of the municipal waste combustion unit.

(2) Temperature of the flue gases at the inlet of your particulate matter control device.

(3) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average.

(c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement and you must notify the Administrator according to § 60.1410(e).

RECORDKEEPING

§ 60.1340 What records must I keep?

You must keep five types of records:

(a) Materials separation plan and siting analysis.

(b) Operator training and certification.

(c) Stack tests.

(d) Continuously monitored pollutants and parameters.

(e) Carbon feed rate.

§ 60.1345 Where must I keep my records and for how long?

(a) Keep all records onsite in paper copy or electronic format unless the Administrator approves another format.

(b) Keep all records on each municipal waste combustion unit for at least 5 years.

(c) Make all records available for submittal to the Administrator, or for onsite review by an inspector.

§ 60.1350 What records must I keep for the materials separation plan and siting analysis?

You must keep records of five items:

(a) The date of each record.

(b) The final materials separation plan.

(c) The siting analysis.

(d) A record of the location and date of the public meetings.

(e) Your responses to the public comments received during the public comment periods.

§ 60.1355 What records must I keep for operator training and certification?

You must keep records of six items:

(a) *Records of provisional certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of the initial provisional certifications.

(3) Documentation showing current provisional certifications.

(b) *Records of full certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of initial and renewal full certifications.

(3) Documentation showing current full certifications.

(c) *Records showing completion of the operator training course.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who have completed the EPA or State municipal waste combustion operator training course.

(2) Dates of completion of the operator training course.

(3) Documentation showing completion of the operator training course.

(d) *Records of reviews for plant-specific operating manuals.* Include three items:

(1) Names of persons who have reviewed the operating manual.

(2) Date of the initial review.

(3) Dates of subsequent annual reviews.

(e) *Records of when a certified operator is temporarily offsite.* Include two main items:

(1) If the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, record the dates that the certified chief facility operator and certified shift supervisor were offsite.

(2) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks and no other certified operator is onsite, keep records of four items:

(i) Your notice that all certified persons are offsite.

(ii) The conditions that cause those people to be offsite.

(iii) The corrective actions you are taking to ensure a certified chief facility operator or certified shift supervisor is onsite.

(iv) Copies of the written reports submitted every 4 weeks that summarize the actions taken to ensure that a certified chief facility operator or certified shift supervisor will be onsite.

(f) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1360 What records must I keep for stack tests?

For stack tests required under § 60.1285, you must keep records of four items:

(a) The results of the stack tests for eight pollutants or parameters recorded in the appropriate units of measure specified in table 1 of this subpart:

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) Test reports including supporting calculations that document the results of all stack tests.

(c) The maximum demonstrated load of your municipal waste combustion units and maximum temperature at the inlet of your particulate matter control device during all stack tests for dioxins/furans emissions.

(d) The calendar date of each record.

§ 60.1365 What records must I keep for continuously monitored pollutants or parameters?

You must keep records of eight items:

(a) *Records of monitoring data.* Document six parameters measured using continuous monitoring systems:

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions.

(3) For Class I municipal waste combustion units only, all 1-hour average concentrations of nitrogen oxides emissions.

(4) All 1-hour average concentrations of carbon monoxide emissions.

(5) All 1-hour average load levels of your municipal waste combustion unit.

(6) All 1-hour average flue gas temperatures at the inlet of the particulate matter control device.

(b) *Records of average concentrations and percent reductions.* Document five parameters:

(1) All 24-hour daily block geometric average concentrations of sulfur dioxide emissions or average percent reductions of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, all 24-hour daily arithmetic average concentrations of nitrogen oxides emissions.

(3) All 4-hour block or 24-hour daily block arithmetic average concentrations of carbon monoxide emissions.

(4) All 4-hour block arithmetic average load levels of your municipal waste combustion unit.

(5) All 4-hour block arithmetic average flue gas temperatures at the inlet of the particulate matter control device.

(c) *Records of exceedances*. Document three items:

(1) Calendar dates whenever any of the five pollutant or parameter levels recorded in paragraph (b) of this section or the opacity level recorded in paragraph (a)(1) of this section did not meet the emission limits or operating levels specified in this subpart.

(2) Reasons you exceeded the applicable emission limits or operating levels.

(3) Corrective actions you took, or are taking, to meet the emission limits or operating levels.

(d) *Records of minimum data*. Document three items:

(1) Calendar dates for which you did not collect the minimum amount of data required under §§60.1260 and 60.1335. Record the dates for five types of pollutants and parameters:

(i) Sulfur dioxide emissions.

(ii) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(iii) Carbon monoxide emissions.

(iv) Load levels of your municipal waste combustion unit.

(v) Temperatures of the flue gases at the inlet of the particulate matter control device.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took, or are taking, to obtain the required amount of data.

(e) *Records of exclusions*. Document each time you have excluded data from your calculation of averages for any of the following five pollutants or parameters and the reasons the data were excluded:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load levels of your municipal waste combustion unit.

(5) Temperatures of the flue gases at the inlet of the particulate matter control device.

(f) *Records of drift and accuracy*. Document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part. Keep the records for the sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide continuous emissions monitoring systems.

(g) *Records of the relationship between oxygen and carbon dioxide*. If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, document the relationship between oxygen and carbon dioxide, as specified in §60.1255.

(h) *Records of calendar dates*. Include the calendar date on each record.

§60.1370 What records must I keep for municipal waste combustion units that use activated carbon?

For municipal waste combustion units that use activated carbon to control dioxins/furans or mercury emissions, you must keep records of five items:

(a) *Records of average carbon feed rate*. Document five items:

(1) Average carbon feed rate in kilograms (or pounds) per hour during all stack tests for dioxins/furans and mercury emissions. Include supporting calculations in the records.

(2) For the operating parameter chosen to monitor carbon feed rate, average operating level during all stack tests for dioxins/furans and mercury emissions. Include supporting data that document the relationship between the operating parameter and the carbon feed rate.

(3) All 8-hour block average carbon feed rates in kilograms (or pounds) per hour calculated from the monitored operating parameter.

(4) Total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include supporting documentation.

(5) Required quarterly usage of carbon for the municipal waste combustion plant, calculated using equation 4 or 5 in §60.1460(f). If you choose to evaluate required quarterly usage for

carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant. Include supporting calculations.

(b) *Records of low carbon feed rates.* Document three items:

(1) The calendar dates when the average carbon feed rate over an 8-hour block was less than the average carbon feed rates determined during the most recent stack test for dioxins/furans or mercury emissions (whichever has a higher feed rate).

(2) Reasons for the low carbon feed rates.

(3) Corrective actions you took or are taking to meet the 8-hour average carbon feed rate requirement.

(c) *Records of minimum carbon feed rate data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of carbon feed rate data required under § 60.1335.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to get the required amount of data.

(d) *Records of exclusions.* Document each time you have excluded data from your calculation of average carbon feed rates and the reasons the data were excluded.

(e) *Records of calendar dates.* Include the calendar date on each record.

REPORTING

§ 60.1375 What reports must I submit before I submit my notice of construction?

(a) If you are required to submit an application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, you must submit five items by the date you submit your application.

(1) Your draft materials separation plan, as specified in § 60.1065.

(2) Your revised materials separation plan, as specified in § 60.1085(c).

(3) Your notice of the initial public meeting for your draft materials separation plan, as specified in § 60.1070(b).

(4) A transcript of the initial public meeting, as specified in § 60.1080(f).

(5) The document that summarizes your responses to the public comments you received during the initial public comment period, as specified in § 60.1085(a).

(b) If you are not required to submit an application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, you must submit the items in paragraph (a) of this section with your notice of construction.

§ 60.1380 What must I include in my notice of construction?

(a) Include ten items:

(1) A statement of your intent to construct the municipal waste combustion unit.

(2) The planned initial startup date of your municipal waste combustion unit.

(3) The types of fuels you plan to combust in your municipal waste combustion unit.

(4) The capacity of your municipal waste combustion unit including supporting capacity calculations, as specified in § 60.1460(d) and (e).

(5) Your siting analysis, as specified in § 60.1125.

(6) Your final materials separation plan, as specified in § 60.1100(b).

(7) Your notice of the second public meeting (siting analysis meeting), as specified in § 60.1130(b).

(8) A transcript of the second public meeting, as specified in § 60.1140(d).

(9) A copy of the document that summarizes your responses to the public comments you received during the second public comment period, as specified in § 60.1145(a).

(10) Your final siting analysis, as specified in § 60.1145(c).

(b) Submit your notice of construction no later than 30 days after you commence construction, reconstruction, or modification of your municipal waste combustion unit.

§ 60.1385 What reports must I submit after I submit my notice of construction and in what form?

(a) Submit an initial report and annual reports, plus semiannual reports for any emission or parameter level that does not meet the limits specified in this subpart.

(b) Submit all reports on paper, postmarked on or before the submittal dates in §§ 60.1395, 60.1405, and 60.1420. If

the Administrator agrees, you may submit electronic reports.

(c) Keep a copy of all reports required by §§60.1400, 60.1410, and 60.1425 onsite for 5 years.

§60.1390 What are the appropriate units of measurement for reporting my data?

See tables 1 and 2 of this subpart for appropriate units of measurement.

§60.1395 When must I submit the initial report?

As specified in §60.7(c), submit your initial report within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

§60.1400 What must I include in my initial report?

You must include seven items:

(a) The emission levels measured on the date of the initial evaluation of your continuous emission monitoring systems for all of the following five pollutants or parameters as recorded in accordance with §60.1365(b).

(1) The 24-hour daily geometric average concentration of sulfur dioxide emissions or the 24-hour daily geometric percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, the 24-hour daily arithmetic average concentration of nitrogen oxides emissions.

(3) The 4-hour block or 24-hour daily arithmetic average concentration of carbon monoxide emissions.

(4) The 4-hour block arithmetic average load level of your municipal waste combustion unit.

(5) The 4-hour block arithmetic average flue gas temperature at the inlet of the particulate matter control device.

(b) The results of the initial stack tests for eight pollutants or parameters (use appropriate units as specified in table 2 of this subpart):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(c) The test report that documents the initial stack tests including supporting calculations.

(d) The initial performance evaluation of your continuous emissions monitoring systems. Use the applicable performance specifications in appendix B of this part in conducting the evaluation.

(e) The maximum demonstrated load of your municipal waste combustion unit and the maximum demonstrated temperature of the flue gases at the inlet of the particulate matter control device. Use values established during your initial stack test for dioxins/furans emissions and include supporting calculations.

(f) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the average carbon feed rates that you recorded during the initial stack tests for dioxins/furans and mercury emissions. Include supporting calculations as specified in §60.1370(a)(1) and (2).

(g) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in §60.1255.

§60.1405 When must I submit the annual report?

Submit the annual report no later than February 1 of each year that follows the calendar year in which you collected the data. If you have an operating permit for any unit under title V of the Clean Air Act (CAA), the permit may require you to submit semiannual reports. Parts 70 and 71 of this chapter contain program requirements for permits.

§60.1410 What must I include in my annual report?

Summarize data collected for all pollutants and parameters regulated under this subpart. Your summary must include twelve items:

(a) The results of the annual stack test, using appropriate units, for eight pollutants, as recorded under §60.1360(a):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.
(4) Mercury.
(5) Particulate matter.
(6) Opacity.
(7) Hydrogen chloride.
(8) Fugitive ash.

(b) A list of the highest average levels recorded, in the appropriate units. List the values for five pollutants or parameters:

(1) Sulfur dioxide emissions.
(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.
(3) Carbon monoxide emissions.
(4) Load level of the municipal waste combustion unit.
(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device (4-hour block average).

(c) The highest 6-minute opacity level measured. Base the value on all 6-minute average opacity levels recorded by your continuous opacity monitoring system (§ 60.1365(a)(1)).

(d) For municipal waste combustion units that use activated carbon for controlling dioxins/furans or mercury emissions, include four records:

(1) The average carbon feed rates recorded during the most recent dioxins/furans and mercury stack tests.
(2) The lowest 8-hour block average carbon feed rate recorded during the year.
(3) The total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant.
(4) The required quarterly carbon usage of your municipal waste combustion plant calculated using equation 4 or 5 in § 60.1460(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant.

(e) The total number of days that you did not obtain the minimum number of hours of data for six pollutants or parameters. Include the reasons you did not obtain the data and corrective actions that you have taken to obtain the data in the future. Include data on:

(1) Sulfur dioxide emissions.
(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.
(3) Carbon monoxide emissions.
(4) Load level of the municipal waste combustion unit.
(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.
(6) Carbon feed rate.

(f) The number of hours you have excluded data from the calculation of average levels (include the reasons for excluding it). Include data for six pollutants or parameters:

(1) Sulfur dioxide emissions.
(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.
(3) Carbon monoxide emissions.
(4) Load level of the municipal waste combustion unit.
(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.
(6) Carbon feed rate.

(g) A notice of your intent to begin a reduced stack testing schedule for dioxins/furans emissions during the following calendar year, if you are eligible for alternative scheduling (§ 60.1305(a) or (b)).

(h) A notice of your intent to begin a reduced stack testing schedule for other pollutants during the following calendar year if you are eligible for alternative scheduling (§ 60.1305(a)).

(i) A summary of any emission or parameter level that did not meet the limits specified in this subpart.

(j) A summary of the data in paragraphs (a) through (d) of this section from the year preceding the reporting year which gives the Administrator a summary of the performance of the municipal waste combustion unit over a 2-year period.

(k) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in § 60.1255.

(l) Documentation of periods when all certified chief facility operators and certified shift supervisors are offsite for more than 12 hours.

§ 60.1415 What must I do if I am out of compliance with the requirements of this subpart?

You must submit a semiannual report on any recorded emission or parameter level that does not meet the requirements specified in this subpart.

§ 60.1420 If a semiannual report is required, when must I submit it?

(a) For data collected during the first half of a calendar year, submit your semiannual report by August 1 of that year.

(b) For data you collected during the second half of the calendar year, submit your semiannual report by February 1 of the following year.

§ 60.1425 What must I include in the semiannual out-of-compliance reports?

You must include three items in the semiannual report:

(a) For any of the following six pollutants or parameters that exceeded the limits specified in this subpart, include the calendar date they exceeded the limits, the averaged and recorded data for that date, the reasons for exceeding the limits, and your corrective actions:

(1) Concentration or percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, concentration of nitrogen oxides emissions.

(3) Concentration of carbon monoxide emissions.

(4) Load level of your municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of your particulate matter air pollution control device.

(6) Average 6-minute opacity level. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the limit on opacity emissions.

(b) If the results of your annual stack tests (as recorded in § 60.1360(a)) show emissions above the limits specified in table 1 of this subpart for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, include a copy of the test report that documents the emission levels and your corrective actions.

(c) For municipal waste combustion units that apply activated carbon to control dioxins/furans or mercury emissions, include two items:

(1) Documentation of all dates when the 8-hour block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent mercury and dioxins/furans stack test (as specified in § 60.1370(a)(1)). Include four items:

(i) Eight-hour average carbon feed rate.

(ii) Reasons for occurrences of low carbon feed rates.

(iii) The corrective actions you have taken to meet the carbon feed rate requirement.

(iv) The calendar date.

(2) Documentation of each quarter when total carbon purchased and delivered to the municipal waste combustion plant is less than the total required quarterly usage of carbon. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include five items:

(i) Amount of carbon purchased and delivered to the plant.

(ii) Required quarterly usage of carbon.

(iii) Reasons for not meeting the required quarterly usage of carbon.

(iv) The corrective actions you have taken to meet the required quarterly usage of carbon.

(v) The calendar date.

§ 60.1430 Can reporting dates be changed?

(a) If the Administrator agrees, you may change the semiannual or annual reporting dates.

(b) See § 60.19(c) for procedures to seek approval to change your reporting date.

AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

§ 60.1435 What is an air curtain incinerator?

An air curtain incinerator operates by forcefully projecting a curtain of air

across an open chamber or open pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

§ 60.1440 What is yard waste?

Yard waste is grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(a) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in § 60.1465.

(b) Clean wood that is exempt from the definition of ''municipal solid waste'' in § 60.1465.

§ 60.1445 What are the emission limits for air curtain incinerators that burn 100 percent yard waste?

If your air curtain incinerator combusts 100 percent yard waste, you must meet only the emission limits in this section.

(a) Within 60 days after your air curtain incinerator reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup, you must meet two limits:

(1) The opacity limit is 10 percent (6-minute average) for air curtain incinerators that can combust at least 35 tons per day of municipal solid waste and no more than 250 tons per day of municipal solid waste.

(2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times. Each malfunction must not exceed 3 hours.

§ 60.1450 How must I monitor opacity for air curtain incinerators that burn 100 percent yard waste?

(a) Use EPA Reference Method 9 in appendix A of this part to determine compliance with the opacity limit.

(b) Conduct an initial test for opacity as specified in § 60.8.

(c) After the initial test for opacity, conduct annual tests no more than 13 calendar months following the date of your previous test.

§ 60.1455 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent yard waste?

(a) Provide a notice of construction that includes four items:

(1) Your intent to construct the air curtain incinerator.

(2) Your planned initial startup date.

(3) Types of fuels you plan to combust in your air curtain incinerator.

(4) The capacity of your incinerator, including supporting capacity calculations, as specified in § 60.1460(d) and (e).

(b) Keep records of results of all opacity tests onsite in either paper copy or electronic format unless the Administrator approves another format.

(c) Keep all records for each incinerator for at least 5 years.

(d) Make all records available for submittal to the Administrator or for onsite review by an inspector.

(e) Submit the results (each 6-minute average) of the opacity tests by February 1 of the year following the year of the opacity emission test.

(f) Submit reports as a paper copy on or before the applicable submittal date. If the Administrator agrees, you may submit reports on electronic media.

(g) If the Administrator agrees, you may change the annual reporting dates (see § 60.19(c)).

(h) Keep a copy of all reports onsite for a period of 5 years.

EQUATIONS

§ 60.1460 What equations must I use?

(a) *Concentration correction to 7 percent oxygen.* Correct any pollutant concentration to 7 percent oxygen using equation 1 of this section:

$$C_{7\%} = C_{unc} * (13.9) * (1/(20.9 - CO_2)) \quad \text{(Eq.1)}$$

Where:

$C_{7\%}$ = concentration corrected to 7 percent oxygen.
C_{unc} = uncorrected pollutant concentration.
CO_2 = concentration of oxygen (percent).

(b) *Percent reduction in potential mercury emissions.* Calculate the percent reduction in potential mercury emissions ($\%P_{Hg}$) using equation 2 of this section:

$\%P_{Hg} = (E_{i-o}) * (100/E_i)$ (Eq. 2)

Where:

$\%P_{Hg}$ = percent reduction of potential mercury emissions

E_i = mercury emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = mercury emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(c) *Percent reduction in potential hydrogen chloride emissions.* Calculate the percent reduction in potential hydrogen chloride emissions ($\%P_{HCl}$) using equation 3 of this section:

$\%P_{HCl} = (E_{i-o}) * (100/E_i)$ (Eq. 3)

Where:

$\%P_{HCl}$ = percent reduction of the potential hydrogen chloride emissions

E_I = hydrogen chloride emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_O = hydrogen chloride emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(d) *Capacity of a municipal waste combustion unit.* For a municipal waste combustion unit that can operate continuously for 24-hour periods, calculate the municipal waste combustion unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For municipal waste combustion units with a design not based on heat input capacity, use the maximum designed charging rate.

(e) *Capacity of a batch municipal waste combustion unit.* Calculate the capacity of a batch municipal waste combustion unit as the maximum design amount of municipal solid waste they can charge per batch multiplied by the maximum number of batches they can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the municipal waste combustion unit can combust 24/16, or 1.5 batches, in 24 hours.

(f) *Quarterly carbon usage.* If you use activated carbon to comply with the dioxins/furans or mercury limits, calculate the required quarterly usage of carbon using equation 4 of this section for plant basis or equation 5 of this section for unit basis:

(1) Plant basis.

$$C = \sum_{i=1}^{n} f_i * h_i \qquad \text{(Eq. 4)}$$

Where:

C = required quarterly carbon usage for the plant in kilograms (or pounds).

f_i = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h_i = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

n = number of municipal waste combustion units, i, located at your plant.

(2) Unit basis.

$$C = f * h \qquad \text{(Eq. 5)}$$

Where:

C = required quarterly carbon usage for the unit in kilograms (or pounds).

f = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

DEFINITIONS

§ 60.1465 What definitions must I know?

Terms used but not defined in this section are defined in the CAA and in subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a State Air Pollution Control Agency.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

Batch municipal waste combustion unit means a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 (or 366 consecutive days for leap years) consecutive days starting on January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustion unit. That person is responsible for daily onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit.

Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

(1) ''Yard waste,'' which is defined elsewhere in this section.

(2) Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of ''municipal solid waste'' in this section.

Co-fired combustion unit means a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a co-fired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter.

Continuous burning means the continuous, semicontinuous, or batch feeding of municipal solid waste to dispose of the waste, produce energy, or provide heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not mean the use of municipal solid waste solely to thermally protect the grate or hearth during the startup period when municipal solid waste is not fed to the grate or hearth.

Continuous emission monitoring system means a monitoring system *that continuously measures the emissions of a pollutant from a municipal waste combustion unit*.

Dioxins/furans mean tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Eight-hour block average means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of three 8-hour periods of time:

(1) 12:00 midnight to 8:00 a.m.
(2) 8:00 a.m. to 4:00 p.m.
(3) 4:00 p.m. to 12:00 midnight.

Federally enforceable means all limits and conditions the Administrator can enforce (including the requirements of 40 CFR parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period that starts on January 1 and ends on June 30 in any year.

Fluidized bed combustion unit means a unit where municipal waste is combusted in a fluidized bed of material. The fluidized bed material may remain in the primary combustion zone or may be carried out of the primary combustion zone and returned through a recirculation loop.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of six 4-hour periods:

(1) 12:00 midnight to 4:00 a.m.
(2) 4:00 a.m. to 8:00 a.m.
(3) 8:00 a.m. to 12:00 noon.
(4) 12:00 noon to 4:00 p.m.
(5) 4:00 p.m. to 8:00 p.m.
(6) 8:00 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, that includes municipal waste combustion units with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a waterwall furnace.

Materials separation plan means a plan that identifies a goal and an approach for separating certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include three items:

(1) Elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems.

(2) Different goals or approaches for different subareas in the service area.

(3) No materials separation activities for certain subareas or, if warranted, the entire service area.

Maximum demonstrated load of a municipal waste combustion unit means the highest 4-hour block arithmetic average municipal waste combustion unit load achieved during 4 consecutive hours in the course of the most recent dioxins/furans stack test that demonstrates compliance with the applicable emission limit for dioxins/furans specified in this subpart.

Maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent stack test for dioxins/furans emissions that demonstrates compliance with the limits specified in this subpart.

Medical/infectious waste means any waste meeting the definition of ''medical/infectious waste'' in § 60.51c of subpart E, of this part.

Mixed fuel-fired (pulverized coal/refuse-derived fuel) combustion unit means a combustion unit that combusts coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is combusted in suspension. That includes both conventional pulverized coal and micropulverized coal.

Modification or *modified municipal waste combustion unit* means a municipal waste combustion unit you have changed after June 6, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.

(2) Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any air pollutant for which new source performance standards have been established under section 129 or section 111 of the CAA. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in the determination.

Modular excess-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Municipal waste combustion plant means one or more municipal waste combustion units at the same location as specified under Applicability (§ 60.1015(a)and (b)).

Municipal waste combustion plant capacity means the aggregate municipal waste combustion capacity of all municipal waste combustion units at the plant that are subject to subparts Ea or Eb of this part, or this subpart.

Municipal waste combustion unit means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Two criteria further define municipal waste combustion units:

(1) Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under Applicability (§ 60.1020(h) and (i)). Municipal waste combustion units also do not include cement kilns that combust municipal solid waste as specified under Applicability (§ 60.1020(j)). Municipal waste combustion units also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit

or hopper and extends through three areas:

(i) The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.

(ii) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

(iii) The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.

Particulate matter means total particulate matter emitted from municipal waste combustion units as measured using EPA Reference Method 5 in appendix A of this part and the procedures specified in § 60.1300.

Plastics or rubber recycling unit means an integrated processing unit for which plastics, rubber, or rubber tires are the only feed materials (incidental contaminants may be in the feed materials). The feed materials are processed and marketed to become input feed stock for chemical plants or petroleum refineries. The following three criteria further define a plastics or rubber recycling unit:

(1) Each calendar quarter, the combined weight of the feed stock that a plastics or rubber recycling unit produces must be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires that recycling unit processes.

(2) The plastics, rubber, or rubber tires fed to the recycling unit may originate from separating or diverting plastics, rubber, or rubber tires from municipal or industrial solid waste. The feed materials may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards.

(3) The plastics, rubber, and rubber tires fed to the recycling unit may contain incidental contaminants (for example, paper labels on plastic bottles or metal rings on plastic bottle caps).

Potential hydrogen chloride emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Potential mercury emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without controls for mercury emissions.

Potential sulfur dioxide emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids by heating municipal solid waste. The gases, liquids, or solids produced are combusted and the emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustion unit and meeting two criteria:

(1) The reconstruction begins after June 6, 2001.

(2) The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate those costs, see the definition in this section of ''municipal waste combustion unit.''

Refractory unit or *refractory wall furnace* means a municipal waste combustion unit that has no energy recovery (such as through a waterwall) in the furnace of the municipal waste combustion unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Same location means the same or contiguous properties under common ownership or control, including those separated only by a street, road, highway, or other public right-of-way. Common

ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof. Entities may include a municipality, other governmental unit, or any quasi-governmental authority (for example, a public utility district or regional authority for waste disposal).

Second calendar half means the period that starts on July 1 and ends on December 31 in any year.

Shift supervisor means the person who is in direct charge and control of operating a municipal waste combustion unit and who is responsible for onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit during an assigned shift.

Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel) combustion unit means a municipal waste combustion unit that combusts coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions when referring to units of measure mean a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup period means the period when a municipal waste combustion unit begins the continuous combustion of municipal solid waste. It does not include any warmup period during which the municipal waste combustion unit combusts fossil fuel or other solid waste fuel but receives no municipal solid waste.

Stoker (refuse-derived fuel) combustion unit means a steam generating unit that combusts refuse-derived fuel in a semisuspension combusting mode, using air-fed distributors.

Total mass dioxins/furans or *total mass* means the total mass of tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using EPA Reference Method 23 in appendix A of this part and the procedures specified in § 60.1300.

Twenty-four hour daily average or *24-hour daily average* means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the municipal waste combustion unit operates and combusts municipal solid waste measured during the 24 hours between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a municipal waste combustion unit that has energy (heat) recovery in the furnace (for example, radiant heat transfer section) of the combustion unit.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in this section.

(2) Clean wood that is exempt from the definition of ''municipal solid waste'' in this section.

TABLE 1 TO SUBPART AAAA OF PART 60—EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS

For the following pollutants	You must meet the following emission limits [a]	Using the following averaging times	And determine compliance by the following methods
1. Organics			
Dioxins/Furans (total mass basis).	13 nanograms per dry standard cubic meter.	3-run average (minimum run duration is 4 hours).	Stack test.
2. Metals:			

For the following pollutants	You must meet the following emission limits [a]	Using the following averaging times	And determine compliance by the following methods
Cadmium	0.020 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Lead	0.20 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter or 85 percent reduction of potential mercury emissions.	3-run average (run duration specified in test method).	Stack test.
Opacity	10 percent	Thirty 6-minute averages	Stack test.
Particulate Matter	24 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
3. Acid Gases:			
Hydrogen Chloride	25 parts per million by dry volume or 95 percent reduction of potential hydrogen chloride emissions.	3-run average (minimum run duration is 1 hour).	Stack test
Nitrogen Oxides (Class I units) [b].	150 (180 for 1st year of operation) parts per million by dry volume.	24-hour daily block arithmetic average concentration.	Continuous emission monitoring system.
Nitrogen Oxides (Class II units) [c].	500 parts per million by dry volume.	See footnote [d]	See footnote [d]
Sulfur Dioxide	30 parts per million by dry volume or 80 percent reduction of potential sulfur dioxide emissions.	24-hour daily block geometric average concentration or percent reduction.	Continuous monitoring emission system.
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period.	Three 1-hour observation periods.	Visible emission test.

[a] All emission limits (except for opacity) are measured at 7 percent oxygen.
[b] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See § 60.1465 for definitions.
[c] Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity no more than 250 tons per day of municipal solid waste. See § 60.1465 for definitions.
[d] No monitoring, testing, recordkeeping, or reporting is required to demonstrate compliance with the nitrogen oxides limit for Class II units.

Table 2 to Subpart AAAA of Part 60—Carbon Monoxide Emission Limits for New Small Municipal Waste Combustion Units

For the following municipal waste combustion units	You must meet the following carbon monoxide limits [a]	Using the following averaging times [b]
1. Fluidized-bed	100 parts per million by dry volume	4-hour.
2. Fluidized bed, mixed fuel, (wood/refuse-derived fuel).	200 parts per million by dry volume	24-hour. [c]
3. Mass burn rotary refractory	100 parts per million by dry volume	4-hour.
4. Mass burn rotary waterwall	100 parts per million by dry volume	24-hour.
5. Mass burn waterwall and refractory	100 parts per million by dry volume	4-hour.
6. Mixed fuel-fired (pulverized coal/refuse-derived fuel).	150 parts per million by dry volume	4-hour.
7. Modular starved-air and excess air	50 parts per million by dry volume	4-hour.
8. Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel).	150 parts per million by dry volume	24-hour daily.
9. Stoker, refuse-derived fuel	150 parts per million by dry volume	24-hour daily.

[a] All limits (except for opacity) are measured at 7 percent oxygen. Compliance is determined by continuous emission monitoring systems.
[b] Block averages, arithmetic mean. See § 60.1465 for definitions.
[c] 24-hour block average, geometric mean. See § 60.1465 for definitions.

TABLE 3 OF SUBPART AAAA OF PART 60—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following continuous emission monitoring systems	Use the following methods in appendix A of this part to validate pollutant concentration levels	Use the following methods in appendix A of this part to measure oxygen (or carbon dioxide)
1. Nitrogen Oxides (Class I units only)[a]	Method 7, 7A, 7B, 7C, 7D, or 7E	Method 3 or 3A.
2. Sulfur Dioxide	Method 6 or 6C	Method 3 or 3A.
3. Carbon Monoxide	Method 10, 10A, or 10B	Method 3 or 3A.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See § 60.1465 for definitions.

TABLE 4 OF SUBPART AAAA OF PART 60—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following pollutants	Use the following span values for your CEMS	Use the following performance specifications in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
1. Opacity	100 percent opacity	P.S. 1	Method 9.
2. Nitrogen Oxides (Class I units only)[a].	Control device outlet: 125 percent of the maximum expected hourly potential nitrogen oxides emissions of the municipal waste combustion unit.	P.S. 2	Method 7E.
3. Sulfur Dioxide	Inlet to control device: 125 percent of the maximum expected sulfur dioxide emissions of the municipal waste combustion unit. Control device outlet: 50 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit.	P.S. 2	Method 6C.
4. Carbon Monoxide	125 percent of the maximum expected hourly potential carbon with monoxide emissions of the municipal waste combustion unit.	P.S. 4A	Method 10 alternative interference trap.
5. Oxygen or Carbon Dioxide.	25 percent oxygen or 25 percent carbon dioxide.	P.S. 3	Method 3A or 3B.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See § 60.1465 for definitions.

TABLE 5 OF SUBPART AAAA OF PART 60—REQUIREMENTS FOR STACK TESTS

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
1. Organics:			
Dioxins/Furans	Method 1	Method 23[a]	The minimum sampling time must be 4 hours per test run while the municipal waste combustion unit is operating at full load.
2. Metals:			
Cadmium	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Lead	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Mercury	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Opacity	Method 9	Method 9	Use Method 9 to determine compliance with opacity limit. 3-hour observation period (thirty 6-minute averages).
Particulate Matter	Method 1	Method 5[a]	The minimum sample Matter volume must be 1.0 cubic meters. The probe and filter holder heating systems in the sample train must be set to provide a gas temperature no greater than 160 ±14 °C. The minimum sampling time is 1 hour.

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
3. Acid Gases:[b]			
Hydrogen Chloride	Method 1	Method 26 or 26A[a]	Test runs must be at least 1 hour long while the municipal waste combustion unit is operating at full load.
4. Other:[b]			
Fugitive Ash	Not applicable	Method 22 (visible emissions).	The three 1-hour observation period must include periods when the facility transfers fugitive ash from the municipal waste combustion unit to the area where the fugitive ash is stored or loaded into containers or trucks.

[a] Must simultaneously measure oxygen (or carbon dioxide) using Method 3A or 3B in appendix A of this part.
[b] Use CEMS to test sulfur dioxide, nitrogen oxide, and carbon monoxide. Stack tests are not required except for quality assurance requirements in appendix F of this part.

Subpart BBBB—Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999

SOURCE: 65 FR 76384, Dec. 6, 2000, unless otherwise noted.

INTRODUCTION

§60.1500 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from existing small municipal waste combustion units. The pollutants addressed by the emission guidelines are listed in tables 2, 3, 4, and 5 of this subpart. The emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act (CAA) and subpart B of this part.

§60.1505 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a State or United States protectorate with one or more existing small municipal waste combustion units that commenced construction on or before August 30, 1999, you must submit a State plan to the U.S. Environmental Protection Agency (EPA) that implements the emission guidelines contained in this subpart.

(b) You must submit the State plan to EPA by December 6, 2001.

§60.1510 Is a State plan required for all States?

No, you are not required to submit a State plan if there are no existing small municipal waste combustion units in your State and you submit a negative declaration letter in place of the State plan.

§60.1515 What must I include in my State plan?

(a) Include nine items:

(1) Inventory of affected municipal waste combustion units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected municipal waste combustion units in your State.

(3) Compliance schedules for each affected municipal waste combustion unit.

(4) Good combustion practices and emission limits for affected municipal waste ombustion units that are at least as protective as the emission guidelines contained in this subpart.

(5) Stack testing, continuous emission monitoring, recordkeeping, and reporting requirements.

(6) Certification that the hearing on the State plan was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(7) Provision for State progress reports to EPA.

(8) Identification of enforceable State mechanisms that you selected for implementing the emission guidelines of this subpart.

(9) Demonstration of your State's legal authority to carry out the CAA sections 111(d) and 129 State plan.

(b) Your State plan can deviate from the format and content of the emission guidelines contained in this subpart. However, if your State plan does deviate, you must demonstrate that your State plan is as protective as the emission guidelines contained in this subpart. Your State plan must address regulatory applicability, increments of progress for retrofit, operator training and certification, operating practice, emission limits, continuous emission monitoring, stack testing, recordkeeping, reporting, and air curtain incinerator requirements.

(c) Follow the requirements of subpart B of this part in your State plan.

§ 60.1520 Is there an approval process for my State plan?

The EPA will review your State plan according to § 60.27.

§ 60.1525 What if my State plan is not approvable?

If you do not submit an approvable State plan (or a negative declaration letter), EPA will develop a Federal plan, according to § 60.27 to implement the emission guidelines contained in this subpart. Owners and operators of municipal waste combustion units not covered by an approved and currently effective State plan must comply with the Federal plan. The Federal plan is an interim action and, by its own terms, will cease to apply when your State plan is approved and becomes effective.

§ 60.1530 Is there an approval process for a negative declaration letter?

No, the EPA has no formal review process for negative declaration letters. Once your negative declaration letter has been received, EPA will place a copy in the public docket and publish a notice in the FEDERAL REGISTER. If, at a later date, an existing small municipal waste combustion unit is identified in your State, the Federal plan implementing the emission guidelines contained in this subpart will automatically apply to that municipal waste combustion unit until your State plan is approved.

§ 60.1535 What compliance schedule must I include in my State plan?

(a) Your State plan must include compliance schedules that require small municipal waste combustion units to achieve final compliance or cease operation as expeditiously as practicable but not later than the earlier of two dates:

(1) December 6, 2005.

(2) Three years after the effective date of State plan approval.

(b) For compliance schedules longer than 1 year after the effective date of State plan approval, State plans must include two items:

(1) Dates for enforceable increments of progress as specified in § 60.1590.

(2) For Class I units (see definition in § 60.1940), dioxins/furans stack test results for at least one test conducted during or after 1990. The stack tests must have been conducted according to the procedures specified under § 60.1790.

(c) Class I units that commenced construction after June 26, 1987 must comply with the dioxins/furans and mercury limits specified in tables 2 and 3 of this subpart by the later of two dates:

(1) One year after the effective date of State plan approval.

(2) One year following the issuance of a revised construction or operation permit, if a permit modification is required.

§ 60.1540 Are there any State plan requirements for this subpart that supersede the requirements specified in subpart B?

Subpart B of this part establishes general requirements for developing and processing CAA section 111(d) plans. This subpart applies instead of the requirements in subpart B of this part, for two items:

(a) *Option for case-by-case less stringent emission standards and longer compliance schedules*. State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all municipal waste combustion units to comply no later than December 6, 2005. That requirement applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in § 60.24(f).

(b) *Increments of progress requirements.* For Class II units (see definition in § 60.1940), a State plan must include at least two increments of progress for the affected municipal waste combustion units. The two minimum increments are the final control plan submittal date and final compliance date in § 60.21(h)(1) and (5). That requirement applies instead of the requirement of § 60.24(e)(1) that would require a State plan to include all five increments of progress for all municipal waste combustion units. For Class I units under this subpart, the final control plan must contain the five increments of progress in § 60.24(e)(1).

§ 60.1545 Does this subpart directly affect municipal waste combustion unit owners and operators in my State?

(a) No, this subpart does not directly affect municipal waste combustion unit owners and operators in your State. However, municipal waste combustion unit owners and operators must comply with the State plan you developed to implement the emission guidelines contained in this subpart. Some States may incorporate the emission guidelines contained in this subpart into their State plans by direct incorporation by reference. Others may include the model rule text directly in their State plan.

(b) All municipal waste combustion units must be in compliance with the requirements established in this subpart by December 6, 2005, whether the municipal waste combustion unit is regulated under a State or Federal plan.

APPLICABILITY OF STATE PLANS

§ 60.1550 What municipal waste combustion units must I address in my State plan?

(a) Your State plan must address all existing small municipal waste combustion units in your State that meet two criteria:

(1) The municipal waste combustion unit has the capacity to combust at least 35 tons per day of municipal solid waste but no more than 250 tons per day of municipal solid waste or refuse-derived fuel.

(2) The municipal waste combustion unit commenced construction on or before August 30, 1999.

(b) If an owner or operator of a municipal waste combustion unit makes changes that meet the definition of modification or reconstruction after June 6, 2001 for subpart AAAA of this part, the municipal waste combustion unit becomes subject to subpart AAAA of this part and the State plan no longer applies to that unit.

(c) If an owner or operator of a municipal waste combustion unit makes physical or operational changes to an existing municipal waste combustion unit primarily to comply with your State plan, subpart AAAA of this part (New Source Performance Standards for New Small Municipal Waste Combustion Units) does not apply to that unit. Such changes do not constitute modifications or reconstructions under subpart AAAA of this part.

§ 60.1555 Are any small municipal waste combustion units exempt from my State plan?

(a) *Small municipal waste combustion units that combust less than 11 tons per day.* Units are exempt from your State plan if four requirements are met:

(1) The municipal waste combustion unit is subject to a federally enforceable permit limiting the amount of municipal solid waste combusted to less than 11 tons per day.

(2) You are notified by the owner or operator that the unit qualifies for the exemption.

(3) You receive from the owner or operator of the unit a copy of the federally enforceable permit.

(4) The owner or operator of the unit keeps daily records of the amount of municipal solid waste combusted.

(b) *Small power production units.* Units are exempt from your State plan if four requirements are met:

(1) The unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity.

(3) You are notified by the owner or operator that the unit qualifies for the exemption.

(4) You receive documentation from the owner or operator that the unit qualifies for the exemption.

(c) *Cogeneration units.* Units are exempt from your State plan if four requirements are met:

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You are notified by the owner or operator that the unit qualifies for the exemption.

(4) You receive documentation from the owner or operator that the unit qualifies for the exemption.

(d) *Municipal waste combustion units that combust only tires.* Units are exempt from your State plan if three requirements are met:

(1) The municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can co-fire coal, fuel oil, natural gas, or other nonmunicipal solid waste).

(2) You are notified by the owner or operator that the unit qualifies for the exemption.

(3) You receive documentation from the owner or operator that the unit qualifies for the exemption.

(e) *Hazardous waste combustion units.* Units are exempt from your State plan if the units have received a permit under section 3005 of the Solid Waste Disposal Act.

(f) *Materials recovery units.* Units are exempt from your State plan if the units combust waste mainly to recover metals. Primary and secondary smelters may qualify for the exemption.

(g) *Co-fired units.* Units are exempt from your State plan if four requirements are met:

(1) The unit has a federally enforceable permit limiting municipal solid waste combustion to 30 percent of the total fuel input by weight.

(2) You are notified by the owner or operator that the unit qualifies for the exemption.

(3) You receive from the owner or operator of the unit a copy of the federally enforceable permit.

(4) The owner or operator records the weights, each quarter, of municipal solid waste and of all other fuels combusted.

(h) *Plastics/rubber recycling units.* Units are exempt from your State plan if four requirements are met:

(1) The pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit as defined under ''Definitions'' (§ 60.1940).

(2) The owner or operator of the unit records the weight, each quarter, of plastics, rubber, and rubber tires processed.

(3) The owner or operator of the unit records the weight, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries.

(4) The owner or operator of the unit keeps the name and address of the purchaser of the feed stocks.

(i) *Units that combust fuels made from products of plastics/rubber recycling plants.* Units are exempt from your State plan if two requirements are met:

(1) The unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feed stocks produced by plastics/rubber recycling units.

(2) The unit does not combust any other municipal solid waste.

(j) *Cement kilns.* Cement kilns that combust municipal solid waste are exempt from your State plan.

(k) *Air curtain incinerators.* If an air curtain incinerator (see § 60.1940 for definition) combusts 100 percent yard waste, then those units must only meet the requirements under ''Model Rule—Air Curtain Incinerators That Burn 100 Percent Yard Waste'' (§§ 60.1910 through 60.1930).

§ 60.1560 Can an affected municipal waste combustion unit reduce its capacity to less than 35 tons per day rather than comply with my State plan?

(a) Yes, an owner or operator of an affected municipal waste combustion unit may choose to reduce, by your

final compliance date, the maximum combustion capacity of the unit to less than 35 tons per day of municipal solid waste rather than comply with your State plan. They must submit a final control plan and the notifications of achievement of increments of progress as specified in § 60.1610.

(b) The final control plan must, at a minimum, include two items:

(1) A description of the physical changes that will be made to accomplish the reduction.

(2) Calculations of the current maximum combustion capacity and the planned maximum combustion capacity after the reduction. Use the equations specified under § 60.1935(d) and (e) to calculate the combustion capacity of a municipal waste combustion unit.

(c) A permit restriction or a change in the method of operation does not qualify as a reduction in capacity. Use the equations specified under § 60.1935(d) and (e) to calculate the combustion capacity of a municipal waste combustion unit.

§ 60.1565 What subcategories of small municipal waste combustion units must I include in my State plan?

This subpart specifies different requirements for different subcategories of municipal waste combustion units. You must use those same two subcategories in your State plan. Those two subcategories are based on the aggregate capacity of the municipal waste combustion plant as follows:

(a) *Class I units.* Class I units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. (*See* the definition of ''municipal waste combustion plant capacity'' in § 60.1940 for specification of which units at a plant are included in the aggregate capacity calculation.)

(b) *Class II units.* Class II units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. (*See* the definition of ''municipal waste combustion plant capacity'' in § 60.1940 for specification of which units at a plant are included in the aggregate capacity calculation.)

USE OF MODEL RULE

§ 60.1570 What is the "model rule" in this subpart?

(a) The model rule is the portion of the emission guidelines (§§ 60.1585 through 60.1905) that addresses the regulatory requirements applicable to small municipal waste combustion units. The model rule provides the requirements in a regulation format.

(b) In the model rule, ''you'' means the owner or operator of a small municipal waste combustion unit.

§ 60.1575 How does the model rule relate to the required elements of my State plan?

The model rule may be used to satisfy the State plan requirements specified in § 60.1515(a)(4) and (5). Alternative language may be used in your State plan, but only if you can demonstrate that the alternative language is as protective as the model rule.

§ 60.1580 What are the principal components of the model rule?

The model rule contains five major components:

(a) Increments of progress toward compliance.

(b) Good combustion practices:

(1) Operator training.

(2) Operator certification.

(3) Operating requirements.

(c) Emission limits.

(d) Monitoring and stack testing.

(e) Recordkeeping and reporting.

MODEL RULE—INCREMENTS OF PROGRESS

§ 60.1585 What are my requirements for meeting increments of progress and achieving final compliance?

(a) *Class I units.* If you plan to achieve compliance more than 1 year following the effective date of State plan approval and a permit modification is not required, or more than 1 year following the date of issuance of a revised construction or operation permit if a permit modification is required, you must meet five increments of progress:

(1) Submit a final control plan.

(2) Submit a notification of retrofit contract award.

(3) Initiate onsite construction.

(4) Complete onsite construction.

(5) Achieve final compliance.

(b) *Class II units.* If you plan to achieve compliance more than 1 year following the effective date of State plan approval and a permit modification is not required, or more than 1 year following the date of issuance of a revised construction or operation permit if a permit modification is required, you must meet two increments of progress:

(1) Submit a final control plan.

(2) Achieve final compliance.

§ 60.1590 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress for Class I and II units. (*See* § 60.1940 for definitions of classes.)

§ 60.1595 What must I include in the notifications of achievement of my increments of progress?

Your notification of achievement of increments of progress must include three items:

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with the increment of progress (§§ 60.1610 through 60.1630).

(c) The notification must be signed by the owner or operator of the municipal waste combustion unit.

§ 60.1600 When must I submit the notifications of achievement of increments of progress?

Notifications of the achievement of increments of progress must be postmarked no later than 10 days after the compliance date for the increment.

§ 60.1605 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the specified date in table 1 of this subpart for achieving that increment of progress. The notification must inform the Administrator that you did not meet the increment. You must include in the notification an explanation of why the increment of progress was not met and your plan for meeting the increment as expeditiously as possible. You must continue to submit reports each subsequent month until the increment of progress is met.

§ 60.1610 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must complete two items:

(a) Submit the final control plan, including a description of the devices for air pollution control and process changes that you will use to comply with the emission limits and other requirements of this subpart.

(b) You must maintain an onsite copy of the final control plan.

§ 60.1615 How do I comply with the increment of progress for awarding contracts?

You must submit a signed copy of the contracts awarded to initiate onsite construction, initiate onsite installation of emission control equipment, and incorporate process changes. Submit the copy of the contracts with the notification that the increment of progress has been achieved. You do not need to include documents incorporated by reference or the attachments to the contracts.

§ 60.1620 How do I comply with the increment of progress for initiating onsite construction?

You must initiate onsite construction and installation of emission control equipment and initiate the process changes outlined in the final control plan.

§ 60.1625 How do I comply with the increment of progress for completing onsite construction?

You must complete onsite construction and installation of emission control equipment and complete process changes outlined in the final control plan.

§60.1630 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete two items:

(a) Complete all process changes and complete retrofit construction as specified in the final control plan.

(b) Connect the air pollution control equipment with the municipal waste combustion unit identified in the final control plan and complete process changes to the municipal waste combustion unit so that if the affected municipal waste combustion unit is brought online, all necessary process changes and air pollution control equipment are operating as designed.

§60.1635 What must I do if I close my municipal waste combustion unit and then restart my municipal waste combustion unit?

(a) If you close your municipal waste combustion unit but will reopen it prior to the final compliance date in your State plan, you must meet the increments of progress specified in §60.1585.

(b) If you close your municipal waste combustion unit but will restart it after your final compliance date, you must complete emission control retrofit and meet the emission limits and good combustion practices on the date your municipal waste combustion unit restarts operation.

§60.1640 What must I do if I plan to permanently close my municipal waste combustion unit and not restart it?

(a) If you plan to close your municipal waste combustion unit rather than comply with the State plan, you must submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

(b) If the closure date is later than 1 year after the effective date of State plan approval, you must enter into a legally binding closure agreement with the Administrator by the date your final control plan is due. The agreement must specify the date by which operation will cease.

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

§60.1645 What types of training must I do?

There are two types of required training:

(a) Training of operators of municipal waste combustion units using the EPA or a State-approved training course.

(b) Training of plant personnel using a plant-specific training course.

§60.1650 Who must complete the operator training course? By when?

(a) Three types of employees must complete the EPA or State-approved operator training course:

(1) Chief facility operators.

(2) Shift supervisors.

(3) Control room operators.

(b) Those employees must complete the operator training course by the later of three dates:

(1) One year after the effective date of State plan approval.

(2) Six months after your municipal waste combustion unit starts up.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

(c) The requirement in paragraph (a) of this section does not apply to chief facility operators, shift supervisors, and control room operators who have obtained full certification from the American Society of Mechanical Engineers on or before the effective date of State plan approval.

(d) You may request that the EPA Administrator waive the requirement in paragraph (a) of this section for chief facility operators, shift supervisors, and control room operators who have obtained provisional certification from the American Society of Mechanical Engineers on or before the effective date of State plan approval.

§60.1655 Who must complete the plant-specific training course?

All employees with responsibilities that affect how a municipal waste combustion unit operates must complete the plant-specific training course. Include at least six types of employees:

(a) Chief facility operators.

(b) Shift supervisors.
(c) Control room operators.
(d) Ash handlers.
(e) Maintenance personnel.
(f) Crane or load handlers.

§ 60.1660 What plant-specific training must I provide?

For plant-specific training, you must do four things:

(a) For training at a particular plant, develop a specific operating manual for that plant by the later of two dates:

(1) Six months after your municipal waste combustion unit starts up.

(2) One year after the effective date of State plan approval.

(b) Establish a program to review the plant-specific operating manual with people whose responsibilities affect the operation of your municipal waste combustion unit. Complete the initial review by the later of three dates:

(1) One year after the effective date of State plan approval.

(2) Six months after your municipal waste combustion unit starts up.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

(c) Update your manual annually.

(d) Review your manual with staff annually.

§ 60.1665 What information must I include in the plant-specific operating manual?

You must include 11 items in the operating manual for your plant:

(a) A summary of all applicable requirements in this subpart.

(b) A description of the basic combustion principles that apply to municipal waste combustion units.

(c) Procedures for receiving, handling, and feeding municipal solid waste.

(d) Procedures to be followed during periods of startup, shutdown, and malfunction of the municipal waste combustion unit.

(e) Procedures for maintaining a proper level of combustion air supply.

(f) Procedures for operating the municipal waste combustion unit in compliance with the requirements contained in this subpart.

(g) Procedures for responding to periodic upset or off-specification conditions.

(h) Procedures for minimizing carryover of particulate matter.

(i) Procedures for handling ash.

(j) Procedures for monitoring emissions from the municipal waste combustion unit.

(k) Procedures for recordkeeping and reporting.

§ 60.1670 Where must I keep the plant-specific operating manual?

You must keep your operating manual in an easily accessible location at your plant. It must be available for review or inspection by all employees who must review it and by the Administrator.

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

§ 60.1675 What types of operator certification must the chief facility operator and shift supervisor obtain and by when must they obtain it?

(a) Each chief facility operator and shift supervisor must obtain and keep a current provisional operator certification from the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in § 60.17(h)(1)) or a current provisional operator certification from your State certification program.

(b) Each chief facility operator and shift supervisor must obtain a provisional certification by the later of three dates:

(1) For Class I units, 12 months after the effective date of State plan approval. For Class II units, 18 months after the effective date of State plan approval.

(2) Six months after the municipal waste combustion unit starts up.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

(c) Each chief facility operator and shift supervisor must take one of three actions:

(1) Obtain a full certification from the American Society of Mechanical Engineers or a State certification program in your State.

(2) Schedule a full certification exam with the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in § 60.17(h)(1)).

(3) Schedule a full certification exam with your State certification program.

(d) The chief facility operator and shift supervisor must obtain the full certification or be scheduled to take the certification exam by the later of the following dates:

(1) For Class I units, 12 months after the effective date of State plan approval. For Class II units, 18 months after the effective date of State plan approval.

(2) Six months after the municipal waste combustion unit starts up.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

§ 60.1680 After the required date for operator certification, who may operate the municipal waste combustion unit?

After the required date for full or provisional certification, you must not operate your municipal waste combustion unit unless one of four employees is on duty:

(a) A fully certified chief facility operator.

(b) A provisionally certified chief facility operator who is scheduled to take the full certification exam.

(c) A fully certified shift supervisor.

(d) A provisionally certified shift supervisor who is scheduled to take the full certification exam.

§ 60.1685 What if all the certified operators must be temporarily offsite?

If the certified chief facility operator and certified shift supervisor both are unavailable, a provisionally certified control room operator at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, you must meet one of three criteria:

(a) When the certified chief facility operator and certified shift supervisor are both offsite for 12 hours or less and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator.

(b) When the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must record the periods when the certified chief facility operator and certified shift supervisor are offsite and include the information in the annual report as specified under § 60.1885(l).

(c) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must take two actions:

(1) Notify the Administrator in writing. In the notice, state what caused the absence and what you are doing to ensure that a certified chief facility operator or certified shift supervisor is onsite.

(2) Submit a status report and corrective action summary to the Administrator every 4 weeks following the initial notification. If the Administrator notifies you that your status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

§ 60.1690 What are the operating practice requirements for my municipal waste combustion unit?

(a) You must not operate your municipal waste combustion unit at loads greater than 110 percent of the maximum demonstrated load of the municipal waste combustion unit (4-hour block average), as specified under ''Definitions'' (§ 60.1940).

(b) You must not operate your municipal waste combustion unit so that the temperature at the inlet of the particulate matter control device exceeds 17 °C above the maximum demonstrated temperature of the particulate matter control device (4-hour block average), as specified under ''Definitions'' (§ 60.1940).

(c) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must maintain an 8-hour block average carbon feed rate at or above the highest average level established during the most recent dioxins/furans or mercury test.

(d) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must evaluate total carbon usage for each calendar quarter. The total amount of carbon purchased and delivered to your municipal waste combustion plant must be at or above the required quarterly usage of carbon. At your option, you may choose to evaluate required quarterly carbon usage on a municipal waste combustion unit basis for each individual municipal waste combustion unit at your plant. Calculate the required quarterly usage of carbon using equation 4 or 5 in § 60.1935(f).

(e) Your municipal waste combustion unit is exempt from limits on load level, temperature at the inlet of the particulate matter control device, and carbon feed rate during any of five situations:

(1) During your annual tests for dioxins/furans.

(2) During your annual mercury tests (for carbon feed rate requirements only).

(3) During the 2 weeks preceding your annual tests for dioxins/furans.

(4) During the 2 weeks preceding your annual mercury tests (for carbon feed rate requirements only).

(5) Whenever the Administrator or delegated State authority permits you to do any of five activities:

(i) Evaluate system performance.

(ii) Test new technology or control technologies.

(iii) Perform diagnostic testing.

(iv) Perform other activities to improve the performance of your municipal waste combustion unit.

(v) Perform other activities to advance the state of the art for emission controls for your municipal waste combustion unit.

§ 60.1695 What happens to the operating requirements during periods of startup, shutdown, and malfunction?

(a) The operating requirements of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

MODEL RULE—EMISSION LIMITS

§ 60.1700 What pollutants are regulated by this subpart?

Eleven pollutants, in four groupings, are regulated:

(a) *Organics*. Dioxins/furans.

(b) *Metals*. (1) Cadmium.

(2) Lead.

(3) Mercury.

(4) Opacity.

(5) Particulate matter.

(c) *Acid gases*. (1) Hydrogen chloride.

(2) Nitrogen oxides.

(3) Sulfur dioxide.

(d) *Other*. (1) Carbon monoxide.

(2) Fugitive ash.

§ 60.1705 What emission limits must I meet? By when?

(a) After the date the initial stack test and continuous emission monitoring system evaluation are required or completed (whichever is earlier), you must meet the applicable emission limits specified in the four tables of this subpart:

(1) For Class I units, see tables 2 and 3 of this subpart.

(2) For Class II units, see table 4 of this subpart.

(3) For carbon monoxide emission limits for both classes of units, see table 5 of this subpart.

(b) If your Class I municipal waste combustion unit began construction, reconstruction, or modification after June 26, 1987, then you must comply with the dioxins/furans and mercury

emission limits specified in table 2 of this subpart as applicable by the later of the following two dates:

(1) One year after the effective date of State plan approval.

(2) One year after the issuance of a revised construction or operating permit, if a permit modification is required. Final compliance with the dioxins/furans limits must be achieved no later than December 6, 2005, even if the date 1 year after the issuance of a revised construction or operation permit is later than December 6, 2005.

§ 60.1710 What happens to the emission limits during periods of startup, shutdown, and malfunction?

(a) The emission limits of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

(c) A maximum of 3 hours of test data can be dismissed from compliance calculations during periods of startup, shutdown, or malfunction.

(d) During startup, shutdown, or malfunction periods longer than 3 hours, emissions data cannot be discarded from compliance calculations and all provisions under § 60.11(d) apply.

MODEL RULE—CONTINUOUS EMISSION MONITORING

§ 60.1715 What types of continuous emission monitoring must I perform?

To continuously monitor emissions, you must perform four tasks:

(a) Install continuous emission monitoring systems for certain gaseous pollutants.

(b) Make sure your continuous emission monitoring systems are operating correctly.

(c) Make sure you obtain the minimum amount of monitoring data.

(d) Install a continuous opacity monitoring system.

§ 60.1720 What continuous emission monitoring systems must I install for gaseous pollutants?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for oxygen (or carbon dioxide), sulfur dioxide, and carbon monoxide. If you operate a Class I municipal waste combustion unit, also install, calibrate, maintain, and operate a continuous emission monitoring system for nitrogen oxides. Install the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and oxygen (or carbon dioxide) at the outlet of the air pollution control device.

(b) You must install, evaluate, and operate each continuous emission monitoring system according to the ''Monitoring Requirements'' in § 60.13.

(c) You must monitor the oxygen (or carbon dioxide) concentration at each location where you monitor sulfur dioxide and carbon monoxide. Additionally, if you operate a Class I municipal waste combustion unit, you must also monitor the oxygen (or carbon dioxide) concentration at the location where you monitor nitrogen oxides.

(d) You may choose to monitor carbon dioxide instead of oxygen as a diluent gas. If you choose to monitor carbon dioxide, then an oxygen monitor is not required and you must follow the requirements in § 60.1745.

(e) If you choose to demonstrate compliance by monitoring the percent reduction of sulfur dioxide, you must also install continuous emission monitoring systems for sulfur dioxide and oxygen (or carbon dioxide) at the inlet of the air pollution control device.

(f) If you prefer to use an alternative sulfur dioxide monitoring method, such as parametric monitoring, or cannot monitor emissions at the inlet of the air pollution control device to determine percent reduction, you can apply to the Administrator for approval to use an alternative monitoring method under § 60.13(i).

§ 60.1725 How are the data from the continuous emission monitoring systems used?

You must use data from the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and carbon monoxide to demonstrate continuous compliance with the applicable emission limits specified in tables 2, 3, 4, and 5 of this subpart. To demonstrate

compliance for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, see § 60.1780.

§ 60.1730 How do I make sure my continuous emission monitoring systems are operating correctly?

(a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure oxygen (or carbon dioxide), sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide.

(b) Complete your initial evaluation of the continuous emission monitoring systems within 180 days after your final compliance date.

(c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your oxygen (or carbon dioxide) continuous emission monitoring system, your sulfur dioxide, nitrogen oxides, or carbon monoxide continuous emission monitoring systems, as appropriate, and the appropriate test methods specified in table 6 of this subpart. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. table 7 of this subpart shows the performance specifications that apply to each continuous emission monitoring system.

(d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

§ 60.1735 Am I exempt from any appendix B or appendix F requirements to evaluate continuous emission monitoring systems?

Yes, the accuracy tests for your sulfur dioxide continuous emission monitoring system require you to also evaluate your oxygen (or carbon dioxide) continuous emission monitoring system. Therefore, your oxygen (or carbon dioxide) continuous emission monitoring system is exempt from two requirements:

(a) Section 2.3 of Performance Specification 3 in appendix B of this part (relative accuracy requirement).

(b) Section 5.1.1 of appendix F of this part (relative accuracy test audit).

§ 60.1740 What is my schedule for evaluating continuous emission monitoring systems?

(a) Conduct annual evaluations of your continuous emission monitoring systems no more than 13 months after the previous evaluation was conducted.

(b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.1745 What must I do if I choose to monitor carbon dioxide instead of oxygen as a diluent gas?

You must establish the relationship between oxygen and carbon dioxide during the initial evaluation of your continuous emission monitoring systems. You may reestablish the relationship during annual evaluations. To establish the relationship use three procedures:

(a) Use EPA Reference Method 3A or 3B in appendix A of this part to determine oxygen concentration at the location of your carbon dioxide monitor.

(b) Conduct at least three test runs for oxygen. Make sure each test run represents a 1-hour average and that sampling continues for at least 30 minutes in each hour.

(c) Use the fuel-factor equation in EPA Reference Method 3B in appendix A of this part to determine the relationship between oxygen and carbon dioxide.

§ 60.1750 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems and is the data collection requirement enforceable?

(a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide are in parts per million by dry volume at 7 percent oxygen (or the equivalent carbon dioxide level). Use the 1-hour averages of oxygen (or carbon dioxide) data from your continuous emission monitoring system to determine the actual oxygen (or carbon dioxide) level and to calculate emissions

at 7 percent oxygen (or the equivalent carbon dioxide level).

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

(c) Obtain valid 1-hour averages for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement regardless of the emission level monitored, and you must notify the Administrator according to § 60.1885(e).

(e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations and percent reductions in accordance with § 60.1755.

§ 60.1755 How do I convert my 1-hour arithmetic averages into appropriate averaging times and units?

(a) Use the equation in § 60.1935(a) to calculate emissions at 7 percent oxygen.

(b) Use EPA Reference Method 19 in appendix A of this part, section 4.3, to calculate the daily geometric average concentrations of sulfur dioxide emissions. If you are monitoring the percent reduction of sulfur dioxide, use EPA Reference Method 19 in appendix A of this part, section 5.4, to determine the daily geometric average percent reduction of potential sulfur dioxide emissions.

(c) If you operate a Class I municipal waste combustion unit, use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the daily arithmetic average for concentrations of nitrogen oxides.

(d) Use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the 4-hour or 24-hour daily block averages (as applicable) for concentrations of carbon monoxide.

§ 60.1760 What is required for my continuous opacity monitoring system and how are the data used?

(a) Install, calibrate, maintain, and operate a continuous opacity monitoring system.

(b) Install, evaluate, and operate each continuous opacity monitoring system according to § 60.13.

(c) Complete an initial evaluation of your continuous opacity monitoring system according to Performance Specification 1 in appendix B of this part. Complete the evaluation by 180 days after your final compliance date.

(d) Complete each annual evaluation of your continuous opacity monitoring system no more than 13 months after the previous evaluation.

(e) Use tests conducted according to EPA Reference Method 9 in appendix A of this part, as specified in § 60.1790, to determine compliance with the opacity limit in table 2 or 4 of this subpart. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the opacity limit.

§ 60.1765 What additional requirements must I meet for the operation of my continuous emission monitoring systems and continuous opacity monitoring system?

Use the required span values and applicable performance specifications in table 8 of this subpart.

§ 60.1770 What must I do if any of my continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements?

Refer to table 8 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

MODEL RULE—STACK TESTING

§ 60.1775 What types of stack tests must I conduct?

Conduct initial and annual stack tests to measure the emission levels of

dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

§ 60.1780 How are the stack test data used?

You must use results of stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash to demonstrate compliance with the applicable emission limits in tables 2 and 4 of this subpart. To demonstrate compliance for carbon monoxide, nitrogen oxides, and sulfur dioxide, see § 60.1725.

§ 60.1785 What schedule must I follow for the stack testing?

(a) Conduct initial stack tests for the pollutants listed in § 60.1775 by 180 days after your final compliance date.

(b) Conduct annual stack tests for the same pollutants after the initial stack test. Conduct each annual stack test no later than 13 months after the previous stack test.

§ 60.1790 What test methods must I use to stack test?

(a) Follow table 8 of this subpart to establish the sampling location and to determine pollutant concentrations, number of traverse points, individual test methods, and other specific testing requirements for the different pollutants.

(b) Make sure that stack tests for all the pollutants consist of at least three test runs, as specified in § 60.8. Use the average of the pollutant emission concentrations from the three test runs to determine compliance with the applicable emission limits in tables 2 and 4 of this subpart.

(c) Obtain an oxygen (or carbon dioxide) measurement at the same time as your pollutant measurements to determine diluent gas levels, as specified in § 60.1720.

(d) Use the equations in § 60.1935(a) to calculate emission levels at 7 percent oxygen (or an equivalent carbon dioxide basis), the percent reduction in potential hydrogen chloride emissions, and the reduction efficiency for mercury emissions. See the individual test methods in table 6 of this subpart for other required equations.

(e) You can apply to the Administrator for approval under § 60.8(b) to use a reference method with minor changes in methodology, use an equivalent method, use an alternative method the results of which the Administrator has determined are adequate for demonstrating compliance, waive the requirement for a performance test because you have demonstrated by other means that you are in compliance, or use a shorter sampling time or smaller sampling volume.

§ 60.1795 May I conduct stack testing less often?

(a) You may test less often if you own or operate a Class II municipal waste combustion unit and if all stack tests for a given pollutant over 3 consecutive years show you comply with the emission limit. In that case, you are not required to conduct a stack test for that pollutant for the next 2 years. However, you must conduct another stack test within 36 months of the anniversary date of the third consecutive stack test that shows you comply with the emission limit. Thereafter, you must perform stack tests every 3rd year but no later than 36 months following the previous stack tests. If a stack test shows noncompliance with an emission limit, you must conduct annual stack tests for that pollutant until all stack tests over 3 consecutive years show compliance with the emission limit for that pollutant. The provision applies to all pollutants subject to stack testing requirements: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

(b) You can test less often for dioxins/furans emissions if you own or operate a municipal waste combustion plant that meets two conditions. First, you have multiple municipal waste combustion units onsite that are subject to this subpart. Second, all those municipal waste combustion units have demonstrated levels of dioxins/furans emissions less than or equal to 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, for 2 consecutive years. In that case, you may choose to conduct annual

stack tests on only one municipal waste combustion unit per year at your plant. The provision only applies to stack testing for dioxins/furans emissions.

(1) Conduct the stack test no more than 13 months following a stack test on any municipal waste combustion unit subject to this subpart at your plant. Each year, test a different municipal waste combustion unit subject to this subpart and test all municipal waste combustion units subject to this subpart in a sequence that you determine. Once you determine a testing sequence, it must not be changed without approval by the Administrator.

(2) If each annual stack test shows levels of dioxins/furans emissions less than or equal to 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, you may continue stack tests on only one municipal waste combustion unit subject to this subpart per year.

(3) If any annual stack test indicates levels of dioxins/furans emissions greater than 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, conduct subsequent annual stack tests on all municipal waste combustion units subject to this subpart at your plant. You may return to testing one municipal waste combustion unit subject to this subpart per year if you can demonstrate dioxins/furans emissions levels less than or equal to 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, for all municipal waste combustion units at your plant subject to this subpart for 2 consecutive years.

§ 60.1800 May I deviate from the 13-month testing schedule if unforeseen circumstances arise?

You may not deviate from the 13-month testing schedules specified in §§ 60.1785(b) and 60.1795(b)(1) unless you apply to the Administrator for an alternative schedule, and the Administrator approves your request for alternate scheduling prior to the date on which you would otherwise have been required to conduct the next stack test.

MODEL RULE—OTHER MONITORING REQUIREMENTS

§ 60.1805 Must I meet other requirements for continuous monitoring?

You must also monitor three operating parameters:

(a) Load level of each municipal waste combustion unit.

(b) Temperature of flue gases at the inlet of your particulate matter air pollution control device.

(c) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

§ 60.1810 How do I monitor the load of my municipal waste combustion unit?

(a) If your municipal waste combustion unit generates steam, you must install, calibrate, maintain, and operate a steam flowmeter or a feed water flowmeter and meet five requirements:

(1) Continuously measure and record the measurements of steam (or feed water) in kilograms (or pounds) per hour.

(2) Calculate your steam (or feed water) flow in 4-hour block averages.

(3) Calculate the steam (or feed water) flow rate using the method in ''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991),'' section 4 (incorporated by reference in § 60.17(h)(2)).

(4) Design, construct, install, calibrate, and use nozzles or orifices for flow rate measurements, using the recommendations in ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, part II of Fluid Meters,'' 6th Edition (1971), chapter 4 (incorporated by reference in § 60.17(h)(3)).

(5) Before each dioxins/furans stack test, or at least once a year, calibrate all signal conversion elements associated with steam (or feed water) flow measurements according to the manufacturer instructions.

(b) If your municipal waste combustion units do not generate steam, or, if your municipal waste combustion units

have shared steam systems and steam load cannot be estimated per unit, you must determine, to the satisfaction of the Administrator, one or more operating parameters that can be used to continuously estimate load level (for example, the feed rate of municipal solid waste or refuse-derived fuel). You must continuously monitor the selected parameters.

§ 60.1815 How do I monitor the temperature of flue gases at the inlet of my particulate matter control device?

You must install, calibrate, maintain, and operate a device to continuously measure the temperature of the flue gas stream at the inlet of each particulate matter control device.

§ 60.1820 How do I monitor the injection rate of activated carbon?

If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must meet three requirements:

(a) Select a carbon injection system operating parameter that can be used to calculate carbon feed rate (for example, screw feeder speed).

(b) During each dioxins/furans and mercury stack test, determine the average carbon feed rate in kilograms (or pounds) per hour. Also, determine the average operating parameter level that correlates to the carbon feed rate. Establish a relationship between the operating parameter and the carbon feed rate in order to calculate the carbon feed rate based on the operating parameter level.

(c) Continuously monitor the selected operating parameter during all periods when the municipal waste combustion unit is operating and combusting waste and calculate the 8-hour block average carbon feed rate in kilograms (or pounds) per hour, based on the selected operating parameter. When calculating the 8-hour block average, do two things:

(1) Exclude hours when the municipal waste combustion unit is not operating.

(2) Include hours when the municipal waste combustion unit is operating but the carbon feed system is not working correctly.

§ 60.1825 What is the minimum amount of monitoring data I must collect with my continuous parameter monitoring systems and is the data collection requirement enforceable?

(a) Where continuous parameter monitoring systems are used, obtain 1-hour arithmetic averages for three parameters:

(1) Load level of the municipal waste combustion unit.

(2) Temperature of the flue gases at the inlet of your particulate matter control device.

(3) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average.

(c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement, and you must notify the Administrator according to § 60.1885(e).

MODEL RULE—RECORDKEEPING

§ 60.1830 What records must I keep?

You must keep four types of records:

(a) Operator training and certification.

(b) Stack tests.

(c) Continuously monitored pollutants and parameters.

(d) Carbon feed rate.

§ 60.1835 Where must I keep my records and for how long?

(a) Keep all records onsite in paper copy or electronic format unless the Administrator approves another format.

(b) Keep all records on each municipal waste combustion unit for at least 5 years.

(c) Make all records available for submittal to the Administrator, or for onsite review by an inspector.

§ 60.1840 What records must I keep for operator training and certification?

You must keep records of six items:

(a) *Records of provisional certifications*. Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of the initial provisional certifications.

(3) Documentation showing current provisional certifications.

(b) *Records of full certifications*. Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of initial and renewal full certifications.

(3) Documentation showing current full certifications.

(c) *Records showing completion of the operator training course*. Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who have completed the EPA or State municipal waste combustion operator training course.

(2) Dates of completion of the operator training course.

(3) Documentation showing completion of operator training course.

(d) *Records of reviews for plant-specific operating manuals*. Include three items:

(1) Names of persons who have reviewed the operating manual.

(2) Date of the initial review.

(3) Dates of subsequent annual reviews.

(e) *Records of when a certified operator is temporarily offsite*. Include two main items:

(1) If the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, record the dates that the certified chief facility operator and certified shift supervisor were offsite.

(2) When all certified chief facility operators and certified shift supervisors are offsite for more than 2 weeks and no other certified operator is onsite, keep records of four items:

(i) Your notice that all certified persons are offsite.

(ii) The conditions that cause those people to be offsite.

(iii) The corrective actions you are taking to ensure a certified chief facility operator or certified shift supervisor is onsite.

(iv) Copies of the written reports submitted every 4 weeks that summarize the actions taken to ensure that a certified chief facility operator or certified shift supervisor will be onsite.

(f) *Records of calendar dates*. Include the calendar date on each record.

§ 60.1845 What records must I keep for stack tests?

For stack tests required under § 60.1775, you must keep records of four items:

(a) The results of the stack tests for eight pollutants or parameters recorded in the appropriate units of measure specified in table 2 or 4 of this subpart:

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) Test reports including supporting calculations that document the results of all stack tests.

(c) The maximum demonstrated load of your municipal waste combustion units and maximum temperature at the inlet of your particulate matter control device during all stack tests for dioxins/furans emissions.

(d) The calendar date of each record.

§ 60.1850 What records must I keep for continuously monitored pollutants or parameters?

You must keep records of eight items.

(a) *Records of monitoring data*. Document six parameters measured using continuous monitoring systems:

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions.

(3) For Class I municipal waste combustion units only, all 1-hour average concentrations of nitrogen oxides emissions.

(4) All 1-hour average concentrations of carbon monoxide emissions.

(5) All 1-hour average load levels of your municipal waste combustion unit.

(6) All 1-hour average flue gas temperatures at the inlet of the particulate matter control device.

(b) *Records of average concentrations and percent reductions.* Document five parameters:

(1) All 24-hour daily block geometric average concentrations of sulfur dioxide emissions or average percent reductions of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, all 24-hour daily arithmetic average concentrations of nitrogen oxides emissions.

(3) All 4-hour block or 24-hour daily block arithmetic average concentrations of carbon monoxide emissions.

(4) All 4-hour block arithmetic average load levels of your municipal waste combustion unit.

(5) All 4-hour block arithmetic average flue gas temperatures at the inlet of the particulate matter control device.

(c) *Records of exceedances.* Document three items:

(1) Calendar dates whenever any of the five pollutant or parameter levels recorded in paragraph (b) of this section or the opacity level recorded in paragraph (a)(1) of this section did not meet the emission limits or operating levels specified in this subpart.

(2) Reasons you exceeded the applicable emission limits or operating levels.

(3) Corrective actions you took, or are taking, to meet the emission limits or operating levels.

(d) *Records of minimum data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of data required under §§ 60.1750 and 60.1825. Record those dates for five types of pollutants and parameters:

(i) Sulfur dioxide emissions.

(ii) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(iii) Carbon monoxide emissions.

(iv) Load levels of your municipal waste combustion unit.

(v) Temperatures of the flue gases at the inlet of the particulate matter control device.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to obtain the required amount of data.

(e) *Records of exclusions.* Document each time you have excluded data from your calculation of averages for any of the following five pollutants or parameters and the reasons the data were excluded:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load levels of your municipal waste combustion unit.

(5) Temperatures of the flue gases at the inlet of the particulate matter control device.

(f) *Records of drift and accuracy.* Document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part. Keep those records for the sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide continuous emissions monitoring systems.

(g) *Records of the relationship between oxygen and carbon dioxide.* If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, document the relationship between oxygen and carbon dioxide, as specified in § 60.1745.

(h) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1855 What records must I keep for municipal waste combustion units that use activated carbon?

For municipal waste combustion units that use activated carbon to control dioxins/furans or mercury emissions, you must keep records of five items:

(a) *Records of average carbon feed rate.* Document five items:

(1) Average carbon feed rate in kilograms (or pounds) per hour during all stack tests for dioxins/furans and mercury emissions. Include supporting calculations in the records.

(2) For the operating parameter chosen to monitor carbon feed rate, average operating level during all stack tests for dioxins/furans and mercury emissions. Include supporting data that document the relationship between the operating parameter and the carbon feed rate.

(3) All 8-hour block average carbon feed rates in kilograms (or pounds) per hour calculated from the monitored operating parameter.

(4) Total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include supporting documentation.

(5) Required quarterly usage of carbon for the municipal waste combustion plant, calculated using equation 4 or 5 in §60.1935(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant. Include supporting calculations.

(b) *Records of low carbon feed rates.* Document three items:

(1) The calendar dates when the average carbon feed rate over an 8-hour block was less than the average carbon feed rates determined during the most recent stack test for dioxins/furans or mercury emissions (whichever has a higher feed rate).

(2) Reasons for the low carbon feed rates.

(3) Corrective actions you took or are taking to meet the 8-hour average carbon feed rate requirement.

(c) *Records of minimum carbon feed rate data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of carbon feed rate data required under §60.1825.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to get the required amount of data.

(d) *Records of exclusions.* Document each time you have excluded data from your calculation of average carbon feed rates and the reasons the data were excluded.

(e) *Records of calendar dates.* Include the calendar date on each record.

MODEL RULE—REPORTING

§60.1860 What reports must I submit and in what form?

(a) Submit an initial report and annual reports, plus semiannual reports for any emission or parameter level that does not meet the limits specified in this subpart.

(b) Submit all reports on paper, postmarked on or before the submittal dates in §§60.1870, 60.1880, and 60.1895. If the Administrator agrees, you may submit electronic reports.

(c) Keep a copy of all reports required by §§60.1875, 60.1885, and 60.1900 onsite for 5 years.

§60.1865 What are the appropriate units of measurement for reporting my data?

See tables 2, 3, 4 and 5 of this subpart for appropriate units of measurement.

§60.1870 When must I submit the initial report?

As specified in §60.7(c), submit your initial report by 180 days after your final compliance date.

§60.1875 What must I include in my initial report?

You must include seven items:

(a) The emission levels measured on the date of the initial evaluation of your continuous emission monitoring systems for all of the following five pollutants or parameters as recorded in accordance with §60.1850(b).

(1) The 24-hour daily geometric average concentration of sulfur dioxide emissions or the 24-hour daily geometric percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, the 24-hour daily arithmetic average concentration of nitrogen oxides emissions.

(3) The 4-hour block or 24-hour daily arithmetic average concentration of carbon monoxide emissions.

(4) The 4-hour block arithmetic average load level of your municipal waste combustion unit.

(5) The 4-hour block arithmetic average flue gas temperature at the inlet of the particulate matter control device.

(b) The results of the initial stack tests for eight pollutants or parameters (use appropriate units as specified in table 2 or 4 of this subpart):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(c) The test report that documents the initial stack tests including supporting calculations.

(d) The initial performance evaluation of your continuous emissions monitoring systems. Use the applicable performance specifications in appendix B of this part in conducting the evaluation.

(e) The maximum demonstrated load of your municipal waste combustion unit and the maximum demonstrated temperature of the flue gases at the inlet of the particulate matter control device. Use values established during your initial stack test for dioxins/furans emissions and include supporting calculations.

(f) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the average carbon feed rates that you recorded during the initial stack tests for dioxins/furans and mercury emissions. Include supporting calculations as specified in § 60.1855(a)(1) and (2).

(g) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in § 60.1745.

§ 60.1880 When must I submit the annual report?

Submit the annual report no later than February 1 of each year that follows the calendar year in which you collected the data. If you have an operating permit for any unit under title V of the CAA, the permit may require you to submit semiannual reports. Parts 70 and 71 of this chapter contain program requirements for permits.

§ 60.1885 What must I include in my annual report?

Summarize data collected for all pollutants and parameters regulated under this subpart. Your summary must include twelve items:

(a) The results of the annual stack test, using appropriate units, for eight pollutants, as recorded under § 60.1845(a):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) A list of the highest average levels recorded, in the appropriate units. List those values for five pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device (4-hour block average).

(c) The highest 6-minute opacity level measured. Base the value on all 6-minute average opacity levels recorded by your continuous opacity monitoring system (§ 60.1850(a)(1)).

(d) For municipal waste combustion units that use activated carbon for controlling dioxins/furans or mercury emissions, include four records:

(1) The average carbon feed rates recorded during the most recent dioxins/furans and mercury stack tests.

(2) The lowest 8-hour block average carbon feed rate recorded during the year.

(3) The total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant.

(4) The required quarterly carbon usage of your municipal waste combustion plant calculated using equation 4 or 5 in § 60.1935(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant.

(e) The total number of days that you did not obtain the minimum number of hours of data for six pollutants or parameters. Include the reasons you did not obtain the data and corrective actions that you have taken to obtain the data in the future. Include data on:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(f) The number of hours you have excluded data from the calculation of average levels (include the reasons for excluding it). Include data for six pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(g) A notice of your intent to begin a reduced stack testing schedule for dioxins/furans emissions during the following calendar year if you are eligible for alternative scheduling (§ 60.1795(a) or (b)).

(h) A notice of your intent to begin a reduced stack testing schedule for other pollutants during the following calendar year if you are eligible for alternative scheduling (§ 60.1795(a)).

(i) A summary of any emission or parameter level that did not meet the limits specified in this subpart.

(j) A summary of the data in paragraphs (a) through (d) of this section from the year preceding the reporting year which gives the Administrator a summary of the performance of the municipal waste combustion unit over a 2-year period.

(k) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in § 60.1745.

(l) Documentation of periods when all certified chief facility operators and certified shift supervisors are offsite for more than 12 hours.

§ 60.1890 What must I do if I am out of compliance with the requirements of this subpart?

You must submit a semiannual report on any recorded emission or parameter level that does not meet the requirements specified in this subpart.

§ 60.1895 If a semiannual report is required, when must I submit it?

(a) For data collected during the first half of a calendar year, submit your semiannual report by August 1 of that year.

(b) For data you collected during the second half of the calendar year, submit your semiannual report by February 1 of the following year.

§ 60.1900 What must I include in the semiannual out-of-compliance reports?

You must include three items in the semiannual report:

(a) For any of the following six pollutants or parameters that exceeded the limits specified in this subpart, include the calendar date they exceeded the limits, the averaged and recorded data for that date, the reasons for exceeding the limits, and your corrective actions:

(1) Concentration or percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, concentration of nitrogen oxides emissions.

(3) Concentration of carbon monoxide emissions.

(4) Load level of your municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of your particulate matter air pollution control device.

(6) Average 6-minute opacity level. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the limit on opacity emissions.

(b) If the results of your annual stack tests (as recorded in § 60.1845(a)) show emissions above the limits specified in table 2 or 4 of this subpart as applicable for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, include a copy of the test report that documents the emission levels and your corrective actions.

(c) For municipal waste combustion units that apply activated carbon to control dioxins/furans or mercury emissions, include two items:

(1) Documentation of all dates when the 8-hour block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent mercury and dioxins/furans stack test (as specified in § 60.1855(a)(1)). Include four items:

(i) Eight-hour average carbon feed rate.

(ii) Reasons for occurrences of low carbon feed rates.

(iii) The corrective actions you have taken to meet the carbon feed rate requirement.

(iv) The calendar date.

(2) Documentation of each quarter when total carbon purchased and delivered to the municipal waste combustion plant is less than the total required quarterly usage of carbon. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include five items:

(i) Amount of carbon purchased and delivered to the plant.

(ii) Required quarterly usage of carbon.

(iii) Reasons for not meeting the required quarterly usage of carbon.

(iv) The corrective actions you have taken to meet the required quarterly usage of carbon.

(v) The calendar date.

§ 60.1905 Can reporting dates be changed?

(a) If the Administrator agrees, you may change the semiannual or annual reporting dates.

(b) See § 60.19(c) for procedures to seek approval to change your reporting date.

MODEL RULE—AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

§ 60.1910 What is an air curtain incinerator?

An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

§ 60.1915 What is yard waste?

Yard waste is grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(a) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in § 60.1940.

(b) Clean wood that is exempt from the definition of ''municipal solid waste'' in § 60.1940.

§ 60.1920 What are the emission limits for air curtain incinerators that burn 100 percent yard waste?

If your air curtain incinerator combusts 100 percent yard waste, you must only meet the emission limits in this section.

(a) By 180 days after your final compliance date, you must meet two limits:

(1) The opacity limit is 10 percent (6-minute average) for air curtain incinerators that can combust at least 35 tons per day of municipal solid waste and no more than 250 tons per day of municipal solid waste.

(2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times. Each malfunction must not exceed 3 hours.

§60.1925 How must I monitor opacity for air curtain incinerators that burn 100 percent yard waste?

(a) Use EPA Reference Method 9 in appendix A of this part to determine compliance with the opacity limit.

(b) Conduct an initial test for opacity as specified in §60.8.

(c) After the initial test for opacity, conduct annual tests no more than 13 calendar months following the date of your previous test.

§60.1930 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent yard waste?

(a) Provide a notice of construction that includes four items:

(1) Your intent to construct the air curtain incinerator.

(2) Your planned initial startup date.

(3) Types of fuels you plan to combust in your air curtain incinerator.

(4) The capacity of your incinerator, including supporting capacity calculations, as specified in §60.1935(d) and (e).

(b) Keep records of results of all opacity tests onsite in either paper copy or electronic format unless the Administrator approves another format.

(c) Keep all records for each incinerator for at least 5 years.

(d) Make all records available for submittal to the Administrator or for onsite review by an inspector.

(e) Submit the results (each 6-minute average) of the opacity tests by February 1 of the year following the year of the opacity emission test.

(f) Submit reports as a paper copy on or before the applicable submittal date. If the Administrator agrees, you may submit reports on electronic media.

(g) If the Administrator agrees, you may change the annual reporting dates (see §60.19(c)).

(h) Keep a copy of all reports onsite for a period of 5 years.

EQUATIONS

§60.1935 What equations must I use?

(a) *Concentration correction to 7 percent oxygen.* Correct any pollutant concentration to 7 percent oxygen using equation 1 of this section:

$$C_{7\%} = C_{unc} * (13.9) * \left(1 / \left(20.9 - CO_2\right)\right) \qquad \text{(Eq. 1)}$$

Where:

$C_{7\%}$ = concentration corrected to 7 percent oxygen.

C_{unc} = uncorrected pollutant concentration.

CO_2 = concentration of oxygen (percent).

(b) *Percent reduction in potential mercury emissions.* Calculate the percent reduction in potential mercury emissions ($\%P_{Hg}$) using equation 2 of this section:

$$\%P_{Hg} = \left(E_i - E_o\right) * \left(100 / E_i\right) \qquad \text{(Eq. 2)}$$

Where:

$\%P_{Hg}$ = percent reduction of potential mercury emissions

E_i = mercury emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = mercury emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(c) *Percent reduction in potential hydrogen chloride emissions.* Calculate the percent reduction in potential hydrogen chloride emissions ($\%P_{HCl}$) using equation 3 of this section:

$$\%P_{HCl} = (E_i - E_o) * (100 / E_i) \qquad \text{(Eq. 3)}$$

Where:

$\%P_{HCl}$ = percent reduction of the potential hydrogen chloride emissions

E_i = hydrogen chloride emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = hydrogen chloride emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(d) *Capacity of a municipal waste combustion unit.* For a municipal waste combustion unit that can operate continuously for 24-hour periods, calculate the municipal waste combustion unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For municipal waste combustion units with a design not based on heat input capacity, use the maximum designed charging rate.

(e) *Capacity of a batch municipal waste combustion unit.* Calculate the capacity of a batch municipal waste combustion unit as the maximum design amount of municipal solid waste they can charge per batch multiplied by the maximum number of batches they can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the municipal waste combustion unit can combust 24/16, or 1.5 batches, in 24 hours.

(f) *Quarterly carbon usage.* If you use activated carbon to comply with the dioxins/furans or mercury limits, calculate the required quarterly usage of carbon using equation 4 of this section for plant basis or equation 5 of this section for unit basis:

(1) Plant basis.

$$C = \sum_{i=1}^{n} f_i * h_i \qquad \text{(Eq. 4)}$$

Where:

C = required quarterly carbon usage for the plant in kilograms (or pounds).

f_i = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h_i = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

n = number of municipal waste combustion units, i, located at your plant.

(2) Unit basis.

$$C = f * h \qquad \text{(Eq. 5)}$$

Where:

C = required quarterly carbon usage for the unit in kilograms (or pounds).

f = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent

mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

DEFINITIONS

§ 60.1940 What definitions must I know?

Terms used but not defined in this section are defined in the CAA and in subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a State Air Pollution Control Agency.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

Batch municipal waste combustion unit means a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 (or 366 consecutive days in leap years) consecutive days starting on January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustion unit. That person is responsible for daily onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit.

Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Class II units mean small municipal combustion units subject to this subpart that are located at municipal waste combustion plants with aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

(1) ''Yard waste,'' which is defined elsewhere in this section.

(2) Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of ''municipal solid waste'' in this section.

Co-fired combustion unit means a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a co-fired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter.

Continuous burning means the continuous, semicontinuous, or batch feeding of municipal solid waste to dispose of the waste, produce energy, or provide heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not mean the use of municipal solid waste solely to thermally protect the grate or hearth during the startup period when municipal solid waste is not fed to the grate or hearth.

Continuous emission monitoring system means a monitoring system that continuously measures the emissions of a pollutant from a municipal waste combustion unit.

Dioxins/furans mean tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Effective date of State plan approval means the effective date that the EPA approves the State plan. The FEDERAL REGISTER specifies the date in the notice that announces EPA's approval of the State plan.

Eight-hour block average means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of three 8-hour periods of time:

(1) 12:00 midnight to 8:00 a.m.

(2) 8:00 a.m. to 4:00 p.m.

(3) 4:00 p.m. to 12:00 midnight.

Federally enforceable means all limits and conditions the Administrator can enforce (including the requirements of 40 CFR parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period that starts on January 1 and ends on June 30 in any year.

Fluidized bed combustion unit means a unit where municipal waste is combusted in a fluidized bed of material. The fluidized bed material may remain in the primary combustion zone or may be carried out of the primary combustion zone and returned through a recirculation loop.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of six 4-hour periods:

(1) 12:00 midnight to 4:00 a.m.

(2) 4:00 a.m. to 8:00 a.m.

(3) 8:00 a.m. to 12:00 noon.

(4) 12:00 noon to 4:00 p.m.

(5) 4:00 p.m. to 8:00 p.m.

(6) 8:00 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, that includes municipal waste combustion units with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a waterwall furnace.

Maximum demonstrated load of a municipal waste combustion unit means the highest 4-hour block arithmetic average municipal waste combustion unit load achieved during 4 consecutive hours in the course of the most recent dioxins/furans stack test that demonstrates compliance with the applicable emission limit for dioxins/furans specified in this subpart.

Maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent stack test for dioxins/furans emissions that demonstrates compliance with the limits specified in this subpart.

Medical/infectious waste means any waste meeting the definition of ''medical/infectious waste'' in § 60.51c.

Mixed fuel-fired (pulverized coal/refuse-derived fuel) combustion unit means a combustion unit that combusts coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is combusted in suspension. That includes both conventional pulverized coal and micropulverized coal.

Modification or *modified municipal waste combustion unit* means a municipal waste combustion unit you have changed after June 6, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.

(2) Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any

air pollutant for which new source performance standards have been established under section 129 or section 111 of the CAA. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in the determination.

Modular excess-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Municipal waste combustion plant means one or more municipal waste combustion units at the same location as specified under Applicability of State Plans (§ 60.1550(a)).

Municipal waste combustion plant capacity means the aggregate municipal waste combustion capacity of all municipal waste combustion units at the plant that are not subject to subparts Ea, Eb, or AAAA of this part.

Municipal waste combustion unit means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Two criteria further define municipal waste combustion units:

(1) Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under Applicability of State Plans (§ 60.1555(h) and (i)). Municipal waste combustion units do not include cement kilns that combust municipal solid waste as specified under Applicability of State Plans (§ 60.1555(j)). Municipal waste combustion units also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit or hopper and extends through three areas:

(i) The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.

(ii) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

(iii) The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.

Particulate matter means total particulate matter emitted from municipal waste combustion units as measured using EPA Reference Method 5 in appendix A of this part and the procedures specified in § 60.1790.

Plastics or rubber recycling unit means an integrated processing unit for which plastics, rubber, or rubber tires are the only feed materials (incidental contaminants may be in the feed materials). The feed materials are processed and marketed to become input feed stock for chemical plants or petroleum refineries. The following three criteria further define a plastics or rubber recycling unit:

(1) Each calendar quarter, the combined weight of the feed stock that a plastics or rubber recycling unit produces must be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires that recycling unit processes.

(2) The plastics, rubber, or rubber tires fed to the recycling unit may originate from separating or diverting plastics, rubber, or rubber tires from municipal or industrial solid waste. The feed materials may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards.

(3) The plastics, rubber, and rubber tires fed to the recycling unit may contain incidental contaminants (for example, paper labels on plastic bottles or metal rings on plastic bottle caps).

Potential hydrogen chloride emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Potential mercury emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without controls for mercury emissions.

Potential sulfur dioxide emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids by heating municipal solid waste. The gases, liquids, or solids produced are combusted and the emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustion unit and meeting two criteria:

(1) The reconstruction begins after June 6, 2001.

(2) The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate the costs, see the definition in this section of ''municipal waste combustion unit.''

Refractory unit or *refractory wall furnace* means a municipal waste combustion unit that has no energy recovery (such as through a waterwall) in the furnace of the municipal waste combustion unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Same location means the same or contiguous properties under common ownership or control, including those separated only by a street, road, highway, or other public right-of-way. Common

ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof. Entities may include a municipality, other governmental unit, or any quasi-governmental authority (for example, a public utility district or regional authority for waste disposal).

Second calendar half means the period that starts on July 1 and ends on December 31 in any year.

Shift supervisor means the person who is in direct charge and control of operating a municipal waste combustion unit and who is responsible for onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit during an assigned shift.

Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel) combustion unit means a municipal waste combustion unit that combusts coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions when referring to units of measure mean a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup period means the period when a municipal waste combustion unit begins the continuous combustion of municipal solid waste. It does not include any warmup period during which the municipal waste combustion unit combusts fossil fuel or other solid waste fuel but receives no municipal solid waste.

State means any of the 50 United States and the protectorates of the United States.

State plan means a plan submitted pursuant to sections 111(d) and 129(b)(2) of the CAA and subpart B of this part, that implements and enforces this subpart.

Stoker (refuse-derived fuel) combustion unit means a steam generating unit that combusts refuse-derived fuel in a semisuspension combusting mode, using air-fed distributors.

Total mass dioxins/furans or *total mass* means the total mass of tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using EPA Reference Method 23 in appendix A of this part and the procedures specified in § 60.1790.

Twenty-four hour daily average or *24-hour daily average* means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the municipal waste combustion unit operates and combusts municipal solid waste measured during the 24 hours between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a municipal waste combustion unit that has energy (heat) recovery in the furnace (for example, radiant heat transfer section) of the combustion unit.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in this section.

(2) Clean wood that is exempt from the definition of ''municipal solid waste'' in this section.

TABLE 1 TO SUBPART BBBB OF PART 60—MODEL RULE—COMPLIANCE SCHEDULES AND INCREMENTS OF PROGRESS

Affected units	Increment 1 (Submit final control plan)	Increment 2 (Award contracts)	Increment 3 (Begin onsite construction)	Increment 4 (Complete onsite construction)	Increment 5 (Final compliance)
1. All Class I units [a,b]	(Dates to be specified in State plan).	(Dates to be specified in State plan).	(Dates to be specified in State plan).	(Dates to be specified in State plan).	(Dates to be specified in State plan). [c,d]
2. All Class II units [a,e].	(Dates to be specified in State plan).	Not applicable	Not applicable	Not applicable	(Dates to be specified in State plan). [c]

[a] Plant specific schedules can be used at the discretion of the State.
[b] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.
[c] The date can be no later than 3 years after the effective date of State plan approval or December 6, 2005.
[d] For Class I units that began construction, reconstruction, or modification after June 26, 1987, comply with the dioxins/furans and mercury limits by the later of two dates:
1. One year after the effective date of State plan approval.
2. One year after the issuance of a revised construction or operation permit, if a permit modification is required.
3. Final compliance with the dioxins/furans limits must be achieved no later than December 6, 2005, even if the date one year after the issuance of a revised construction or operation permit is after December 6, 2005.
[e] Class II units mean all small municipal combustion units subject to this subpart that are located at municipal waste combustion plants with aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

TABLE 2 TO SUBPART BBBB OF PART 60—MODEL RULE—CLASS I EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS [A]

For the following pollutants	You must meet the following emission limits [b]	Using the following averaging times	And determine compliance by the following methods
1. Organics:			
Dioxins/Furans (total mass basis).	30 nanograms per dry standard cubic meter for municipal waste combustion units that do not employ an electrostatic precipitator-based emission control system -or-. 60 nanograms per dry standard cubic meter for municipal waste combustion units that employ an electrostatic precipitator-based emission control system.	3-run average (minimum run duration is 4 hours).	Stack test.
2. Metals:			
Cadmium	0.040 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
Lead	0.490 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter .... 85 percent reduction of potential mercury emissions.	3-run average (run duration specified in test method).	Stack test.
Opacity	10 percent	Thirty 6-minute averages.	Stack test.
Particulate Matter	27 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
3. Acid Gases:			
Hydrogen Chloride ..	31 parts per million by dry volume 95 percent reduction of potential hydrogen chloride emissions.	3-run average (minimum run duration is 1 hour).	Stack test.
Sulfur Dioxide	31 parts per million by dry volume 75 percent reduction of potential sulfur dioxide emissions.	24-hour daily block geometric average concentration percent reduction.	Continuous emission monitoring system.
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period.	Three 1-hour observation periods.	Visible emission test.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.
[b] All emission limits (except for opacity) are measured at 7 percent oxygen.

TABLE 3 TO SUBPART BBBB OF PART 60—MODEL RULE—CLASS I NITROGEN OXIDES EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS[a,b,c]

Municipal waste combustion technology	Limits for class I municipal waste combustion units
1. Mass burn waterwall	200 parts per million by dry volume.
2. Mass burn rotary waterwall	170 parts per million by dry volume.
3. Refuse-derived fuel	250 parts per million by dry volume.
4. Fluidized bed	220 parts per million by dry volume.
5. Mass burn refractory	350 parts per million by dry volume.
6. Modular excess air	190 parts per million by dry volume.
7. Modular starved air	380 parts per million by dry volume.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

[b] Nitrogen oxides limits are measured at 7 percent oxygen.

[c] All limits are 24-hour daily block arithmetic average concentration. Compliance is determined for Class I units by continuous emission monitoring systems.

TABLE 4 TO SUBPART BBBB OF PART 60—MODEL RULE—CLASS II EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNIT [A]

For the following pollutants	You must meet the following emission following determine limits [b]	Using the following averaging times	And determine compliance by the following methods
1. Organics:			
Dioxins/Furans (total mass basis)	125 nanorgrams per dry standard cubic meter.	3-run average (minimum run duration is 4 hours).	Stack test.
2. Metals:			
Cadmium	0.10 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Lead	1.6 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
	85 percent reduction of potential mercury emissions.		
Opacity	10 percent	Thirty 6-minute average	Stack test.
Particulate Matter	70 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
3. Acid Gases:			
Hydrogen Chloride	250 parts per million by volume -or-.	3-run average (minimum run duration is 1 hour).	Stack test.
	50 percent reduction of potential hydrogen chloride emissions.		
Sulfur Dioxide	77 parts per million by dry volume -or-.	24-hour daily block geometric average concentration -or- percent reduction.	Continuous emission monitoring system.
	50 percent reduction of potential sulfur dioxides emissions.		
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period.	Three 1-hour observation periods.	Visible emission test.

[a] Class II units mean all small municipal combustion units subject to this subpart that are located at municipal waste combustion plants with aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

[b] All emission limits (except for opacity) are measured at 7 percent oxygen.

[c] No monitoring, testing, recordkeeping or reporting is required to demonstrate compliance with the nitrogen oxides limit for Class II units.

TABLE 5 TO SUBPART BBBB OF PART 60—MODEL RULE—CARBON MONOXIDE EMISSION LIMITS FOR EXISTING SMALL MUNICIPAL WASTE COMBUSTION UNITS

For the following municipal waste combustion units	You must meet the following carbon monoxide limits [a]	Using the following averaging times [b]
1. Fluidized bed	100 parts per million by dry volume	4-hour.
2. Fluidized bed, mixed fuel, (wood/refuse-derived fuel).	200 parts per million by dry volume	24-hour [c].
3. Mass burn rotary refractory	100 parts per million by dry volume	4-hour.
4. Mass burn rotary waterwall	250 parts per million by dry volume	24-hour.
5. Mass burn waterwall and refractory	100 parts per million by dry volume	4-hour.
6. Mixed fuel-fired, (pulverized coal/refuse-derived fuel).	150 parts per million by dry volume	4-hour.
7. Modular starved-air and excess air	50 parts per million by dry volume	4-hour.
8. Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel).	200 parts per million by dry volume	24-hour daily.
9. Stoker, refuse-derived fuel	200 parts per million by dry volume	24-hour daily.

[a] All emission limits (except for opacity) are measured at 7 percent oxygen. Compliance is determined by continuous emission monitoring systems.
[b] Block averages, arithmetic mean. See § 60.1940 for definitions.
[c] 24-hour block average, geometric mean.

TABLE 6 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following continuous emission monitoring systems	Use the following methods in appendix A of this part to validate poollutant concentratin levels	Use the following methods in appendix A of this part to measure oxygen (or carbon dioxide)
1. Nitrogen Oxides (Class I units only) [a].	Method 7, 7A, 7B,7C, 7D, or 7E.	Method 3 or 3A.
2. Sulfur Dioxide	Method 6 or 6C	Method 3 or 3A.
3. Carbon Monoxide.	Method 10, 10A, or 10B.	Method 3 or 3A.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

TABLE 7 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following pollutants	Use the following span values for CEMS	Use the following performance specifications in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
1. Opacity	100 percent opacity	P.S. 1	Method 9.
2. Nitrogen Oxides (Class I units only).	Control device outlet: 125 percent of the maximum expected hourly potential nitrogen oxides emissions of the municipal waste combustion unit.	P.S. 2	Method 7E.
3. Sulfur Dioxide	Inlet to control device: 125 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit. Control device outlet: 50 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit.	P.S. 2	Method 6C.
4. Carbon Monoxide	125 percent of the maximum expected hourly potential carbon monoxide emissions of the municipal waste combustion unit.	P.S. 4A	Method 10 with alternative interference trap.
5. Oxygen or Carbon Dioxide.	25 percent oxygen or 25 percent carbon dioxide	P.S. 3	Method 3A or 3B.

TABLE 8 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR STACK TESTS

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the following methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
1. Organics			
Dioxins/Furans	Method 1	Method 23 [a]	The minimum sampling time must be 4 hours per test run while the municipal waste combustion unit is operating at full load.
2. Metals			
Cadmium	Method 1	Method 29 [a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Lead	Method 1	Method 29 [a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Mercury	Method 1	Method 29 [a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Opacity	Method 9	Method 9	Use Method 9 to determine compliance with opacity limits. 3-hour observation period (thirty 6-minute averages).
Particulate Matter	Method 1	Method 5 or 29	The minimum sample volume must be 1.0 cubic meters. The probe and filter holder heating systems in the sample train must be set to provide a gas temperature no greater than 160 ±14 °C. The minimum sampling time is 1 hour.
3. Acid Gases [b]			
Hydrogen Chloride	Method 1	Method 26 or 26A [a]	Test runs must be at least 1 hour long while the municipal waste combustion unit is operating at full load.
4. Other [b]			
Fugitive Ash	Not applicable	Method 22 (visible emissions).	The three 1-hour observation period must include periods when the facility transfers fugitive ash from the municipal waste combustion unit to the area where the fugitive ash is stored or loaded into containers or trucks.

[a] Must simultaneously measure oxygen (or carbon dioxide) using Method 3A or 3B in appendix A of this part.
[b] Use CEMS to test sulfur dioxide, nitrogen oxide, and carbon monoxide. Stack tests are not required except for quality assurance requirements in appendix F of this part.

Subpart CCCC—Standards of Performance for Commercial and Industrial Solid Waste Incineration Units

SOURCE: 65 FR 75350, Dec. 1, 2000, unless otherwise noted.

INTRODUCTION

§ 60.2000 What does this subpart do?

This subpart establishes new source performance standards for commercial and industrial solid waste incineration (CISWI) units.

§ 60.2005 When does this subpart become effective?

This subpart takes effect on September 21, 2011. Some of the requirements in this subpart apply to planning the CISWI unit (*i.e.*, the preconstruction requirements in §§ 60.2045 and 60.2050). Other requirements such as the emission limitations and operating limits apply after the CISWI unit begins operation.

[76 FR 15750, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9178, Feb. 7, 2013, § 60.2005 was revised, effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§ 60.2005 When does this subpart become effective?

This subpart takes effect on August 7, 2013. Some of the requirements in this subpart apply to planning the CISWI unit (i.e., the preconstruction requirements in §§ 60.2045 and 60.2050). Other requirements such as the emission limitations and operating limits apply after the CISWI unit begins operation.

APPLICABILITY

§ 60.2010 Does this subpart apply to my incineration unit?

Yes, if your incineration unit meets all the requirements specified in paragraphs (a) through (c) of this section.

(a) Your incineration unit is a new incineration unit as defined in § 60.2015.

(b) Your incineration unit is a CISWI unit as defined in § 60.2265.

(c) Your incineration unit is not exempt under § 60.2020.

§ 60.2015 What is a new incineration unit?

(a) A new incineration unit is an incineration unit that meets any of the criteria specified in paragraph (a)(1) through (a)(2) of this section.

(1) A commercial and industrial solid waste incineration unit that commenced construction after May 20, 2011.

(2) A commercial and industrial solid waste incineration unit that commenced reconstruction or modification after September 21, 2011.

(b) This subpart does not affect your CISWI unit if you make physical or operational changes to your incineration unit primarily to comply with the EG in subpart DDDD of this part (Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units). Such changes do not qualify as reconstruction or modification under this subpart.

[76 FR 15450, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9178, Feb. 7, 2013, § 60.2015 was amended by revising paragraphs (a)(1) and (2) and (b), effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2015 What is a new incineration unit?

(a) * * *

(1) A CISWI unit that commenced construction after June 4, 2010.

(2) A CISWI unit that commenced reconstruction or modification after August 7, 2013.

(b) This subpart does not affect your CISWI unit if you make physical or operational changes to your incineration unit primarily to comply with subpart DDDD of this part (Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units). Such changes do not qualify as reconstruction or modification under this subpart.

§ 60.2020 What combustion units are exempt from this subpart?

This subpart exempts the types of units described in paragraphs (a), (c) through (i) and (n) of this section, but some units are required to provide notifications. Air curtain incinerators are exempt from the requirements in this subpart except for the provisions in §§ 60.2242, 60.2250, and 60.2260.

(a) *Pathological waste incineration units.* Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in § 60.2265 are not subject to this subpart if you meet the two requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

(b) [Reserved]

(c) *Municipal waste combustion units.* Incineration units that are regulated under subpart Ea of this part (Standards of Performance for Municipal Waste Combustors); subpart Eb of this part (Standards of Performance for Large Municipal Waste Combustors); subpart Cb of this part (Emission Guidelines and Compliance Time for Large Municipal Combustors); subpart AAAA of this part (Standards of Performance for Small Municipal Waste Combustion Units); or subpart BBBB of this part (Emission Guidelines for Small Municipal Waste Combustion Units).

(d) *Medical waste incineration units.* Incineration units regulated under subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996) or subpart Ce of this part (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators).

(e) *Small power production facilities.* Units that meet the three requirements specified in paragraphs (e)(1) through (3) of this section.

(1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You submit a request to the Administrator for a determination that the qualifying cogeneration facility is combusting homogenous waste as that term is defined in § 60.2265. The request must include information sufficient to document that the unit meets the criteria of the definition of a small power production facility and that the waste material the unit is proposed to burn is homogeneous.

(f) *Cogeneration facilities.* Units that meet the three requirements specified in paragraphs (f)(1) through (3) of this section.

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You submit a request to the Administrator for a determination that the qualifying cogeneration facility is combusting homogenous waste as that term is defined in § 60.2265. The request must include information sufficient to document that the unit meets the criteria of the definition of a cogeneration facility and that the waste material the unit is combusting is homogeneous.

(g) *Hazardous waste combustion units.* Units for which you are required to get a permit under section 3005 of the Solid Waste Disposal Act.

(h) *Materials recovery units.* Units that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters.

(i) *Air curtain incinerators.* Air curtain incinerators that burn only the materials listed in paragraphs (i)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2245 through 60.2260).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

(j)–(l) [Reserved]

(m) *Sewage treatment plants.* Incineration units regulated under subpart O of this part (Standards of Performance for Sewage Treatment Plants).

(n) *Sewage sludge incineration units.* Incineration units combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter that are subject to subpart LLLL of this part (Standards of Performance for Sewage Sludge Incineration Units) or subpart MMMM of this part (Emission Guidelines for Sewage Sludge Incineration Units). Sewage sludge incineration unit designs include fluidized bed and multiple hearth.

[65 FR 75350, Dec. 1, 2000, as amended at 76 FR 15450, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9178, Feb. 7, 2013, § 60.2020 was amended by revising paragraph (c); revising paragraph (e)(3); adding paragraph (e)(4); revising paragraph (f)(3); adding paragraph (f)(4); revising paragraph (n); adding paragraph (o), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§ 60.2020 What combustion units are exempt from this subpart?

* * * * *

(c) *Municipal waste combustion units.* Incineration units that are subject to subpart Ea of this part (Standards of Performance for Municipal Waste Combustors); subpart Eb of this part (Standards of Performance for Large Municipal Waste Combustors); subpart Cb of this part (Emission Guidelines and Compliance Time for Large Municipal Combustors); subpart AAAA of this part (Standards of Performance for Small Municipal Waste Combustion Units); or subpart BBBB of this part (Emission Guidelines for Small Municipal Waste Combustion Units).

* * * * *

(e) * * *

(3) You submit documentation to the Administrator notifying the EPA that the qualifying small power production facility is combusting homogenous waste.

(4) You maintain the records specified in § 60.2175(w).

(f) * * *

(3) You submit documentation to the Administrator notifying the Agency that the qualifying cogeneration facility is combusting homogenous waste.

(4) You maintain the records specified in § 60.2175(x).

* * * * *

(n) *Sewage sludge incineration units.* Incineration units combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter that are subject to subpart LLLL of this part (Standards of Performance for Sewage Sludge Incineration Units) or subpart MMMM of this part (Emission Guidelines for Sewage Sludge Incineration Units).

(o) *Other solid waste incineration units.* Incineration units that are subject to subpart EEEE of this part (Standards of Performance for Other Solid Waste Incineration Units) or subpart FFFF of this part (Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units).

§ 60.2030 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (4) and (c)(6) through (10) of this section.

(1) Approval of alternatives to the emission limitations in table 1 of this subpart and operating limits established under § 60.2110.

(2) Approval of major alternatives to test methods.

(3) Approval of major alternatives to monitoring.

(4) Approval of major alternatives to recordkeeping and reporting.

(5) [Reserved]

(6) The requirements in § 60.2115.

(7) The requirements in § 60.2100(b)(2).

(8) Approval of alternative opacity emission limits in § 60.2105 under § 60.11(e)(6) through (e)(8).

(9) Performance test and data reduction waivers under § 60.2125(j), 60.8(b)(4) and (5).

(10) Determination of whether a qualifying small power production facility or cogeneration facility under § 60.2020(e) or (f) is combusting homogenous waste as that term is defined in § 60.2265.

[65 FR 75350, Dec. 1, 2000, as amended at 76 FR 15451, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9179, Feb. 7, 2013, § 60.2030 was amended by revising paragraph (c)(10), effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2030 Who implements and enforces this subpart?

* * * * *

(c) * * *

(10) Determination of whether a qualifying small power production facility or cogeneration facility under § 60.2020(e) or (f) is combusting homogenous waste.

§ 60.2035 How are these new source performance standards structured?

These new source performance standards contain the eleven major components listed in paragraphs (a) through (k) of this section.

(a) Preconstruction siting analysis.

(b) Waste management plan.

(c) Operator training and qualification.

(d) Emission limitations and operating limits.

(e) Performance testing.

(f) Initial compliance requirements.

(g) Continuous compliance requirements.

(h) Monitoring.

(i) Recordkeeping and reporting.

(j) Definitions.

(k) Tables.

§ 60.2040 Do all eleven components of these new source performance standards apply at the same time?

No. You must meet the preconstruction siting analysis and waste management plan requirements before you commence construction of the CISWI unit. The operator training and qualification, emission limitations, operating limits, performance testing and compliance, monitoring, and most recordkeeping and reporting requirements are met after the CISWI unit begins operation.

PRECONSTRUCTION SITING ANALYSIS

§ 60.2045 Who must prepare a siting analysis?

(a) You must prepare a siting analysis if you plan to commence construction of an incinerator after December 1, 2000.

(b) You must prepare a siting analysis for CISWI units that commenced construction after June 4, 2010, or that commenced reconstruction or modification after September 21, 2011.

(c) You must prepare a siting analysis if you are required to submit an initial application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, as applicable, for the reconstruction or modification of your CISWI unit.

[76 FR 15451, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9179, Feb. 7, 2013, § 60.2045 was amended by revising paragraph (b), effective Feb. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2045 Who must prepare a siting analysis?

* * * * *

(b) You must prepare a siting analysis for CISWI units that commenced construction after June 4, 2010, or that commenced reconstruction or modification after August 7, 2013.

§ 60.2050 What is a siting analysis?

(a) The siting analysis must consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of your CISWI unit's impacts that are prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, provided they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) You must complete and submit the siting requirements of this section as required under § 60.2190(c) prior to commencing construction.

WASTE MANAGEMENT PLAN

§ 60.2055 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§ 60.2060 When must I submit my waste management plan?

You must submit a waste management plan prior to commencing construction.

§ 60.2065 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures and implement those measures the source considers practical and feasible, considering the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

OPERATOR TRAINING AND QUALIFICATION

§ 60.2070 What are the operator training and qualification requirements?

(a) No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily not accessible, you must follow the procedures in § 60.2100.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (3) of this section.

(1) Training on the eleven subjects listed in paragraphs (c)(1)(i) through (xi) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to prevent and correct malfunctions or to prevent conditions that may lead to malfunctions.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(xi) Waste management practices.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that may serve as reference material following completion of the course.

[65 FR 75350, Dec. 1, 2000, as amended at 76 FR 15451, Mar. 21, 2011]

§ 60.2075 When must the operator training course be completed?

The operator training course must be completed by the later of the three dates specified in paragraphs (a) through (c) of this section.

(a) Six months after your CISWI unit startup.

(b) December 3, 2001.

(c) The date before an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.

§ 60.2080 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.2070(b).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.2070(c)(2).

§ 60.2085 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.

(c) Inspection and maintenance.

(d) Prevention and correction of malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

[65 FR 75350, Dec. 1, 2000, as amended at 76 FR 15451, Mar. 21, 2011]

§ 60.2090 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.2085.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.2080(a).

§ 60.2095 What site-specific documentation is required?

(a) Documentation must be available at the facility and readily accessible for all CISWI unit operators that addresses the ten topics described in paragraphs (a)(1) through (10) of this section. You must maintain this information and the training records required by paragraph (c) of this section in a manner that they can be readily accessed and are suitable for inspection upon request.

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Monitoring procedures for demonstrating compliance with the incinerator operating limits.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§ 60.2055 through 60.2065.

(9) Procedures for handling ash.

(10) A list of the wastes burned during the performance test.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted within 6 months after the effective date of this subpart or prior to an employee's assumption of responsibilities for operation of the CISWI unit, whichever date is later.

(2) Subsequent annual reviews of the information listed in paragraph (a) of this section must be conducted not later than 12 months following the previous review.

(c) You must also maintain the information specified in paragraphs (c)(1) through (3) of this section.

(1) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2095(a) as required by § 60.2095(b), including the date of the initial review and all subsequent annual reviews.

(2) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2070, met the criteria for qualification under § 60.2080, and maintained or renewed their qualification under § 60.2085 or § 60.2090. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

§ 60.2100 What if all the qualified operators are temporarily not accessible?

If all qualified operators are temporarily not accessible (i.e., not at the facility and not able to be at the facility within 1 hour), you must meet one of the two criteria specified in paragraphs (a) and (b) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When all qualified operators are not accessible for more than 8 hours, but less than 2 weeks, the CISWI unit may be operated by other plant personnel familiar with the operation of the CISWI unit who have completed a review of the information specified in § 60.2095(a) within the past 12 months. However, you must record the period when all qualified operators were not accessible and include this deviation in the annual report as specified under § 60.2210.

(b) When all qualified operators are not accessible for 2 weeks or more, you

must take the two actions that are described in paragraphs (b)(1) and (2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to the Administrator every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible and requesting approval from the Administrator to continue operation of the CISWI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (b)(1) of this section. If the Administrator notifies you that your request to continue operation of the CISWI unit is disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if you meet the two requirements in paragraphs (b)(2)(i) and (ii) of this section.

(i) A qualified operator is accessible as required under § 60.2070(a).

(ii) You notify the Administrator that a qualified operator is accessible and that you are resuming operation.

EMISSION LIMITATIONS AND OPERATING LIMITS

§ 60.2105 What emission limitations must I meet and by when?

(a) You must meet the emission limitations for each CISWI unit, including bypass stack or vent, specified in table 1 of this subpart or tables 5 through 8 of this subpart by the applicable date in § 60.2140. You must be in compliance with the emission limitations of this subpart that apply to you at all times.

(b) An incinerator unit that commenced construction after November 30, 1999, but no later than June 4, 2010, or that commenced reconstruction or modification on or after June 1, 2001, but no later than September 21, 2011 must meet the more stringent emission limit for the respective pollutant in table 1 of this subpart or table 6 of subpart DDDD.

[76 FR 15451, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9179, Feb. 7, 2013, § 60.2105 was amended by revising paragraph (b), effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2105 What emission limitations must I meet and by when?

* * * * *

(b) An incinerator unit that commenced construction after November 30, 1999, but no later than June 4, 2010, or that commenced reconstruction or modification on or after June 1, 2001 but no later than August 7, 2013, must meet the more stringent emission limit for the respective pollutant in table 1 of this subpart or table 6 of subpart DDDD.

§ 60.2110 What operating limits must I meet and by when?

(a) If you use a wet scrubber(s) to comply with the emission limitations, you must establish operating limits for up to four operating parameters (as specified in table 2 of this subpart) as described in paragraphs (a)(1) through (4) of this section during the initial performance test.

(1) Maximum charge rate, calculated using one of the two different procedures in paragraph (a)(1)(i) or (ii), as appropriate.

(i) For continuous and intermittent units, maximum charge rate is 110 percent of the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(ii) For batch units, maximum charge rate is 110 percent of the daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(2) Minimum pressure drop across the wet particulate matter scrubber, which is calculated as the lowest 1-hour average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the fan for the wet scrubber, which is calculated as the lowest 1-hour average amperage to the wet

scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(3) Minimum scrubber liquid flow rate, which is calculated as the lowest 1-hour average liquid flow rate at the inlet to the wet acid gas or particulate matter scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(4) Minimum scrubber liquor pH, which is calculated as the lowest 1-hour average liquor pH at the inlet to the wet acid gas scrubber measured during the most recent performance test demonstrating compliance with the HCl emission limitation.

(b) You must meet the operating limits established during the initial performance test 60 days after your CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

(c) If you use a fabric filter to comply with the emission limitations, you must operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by you to initiate corrective action.

(d) If you use an electrostatic precipitator to comply with the emission limitations, you must measure the (secondary) voltage and amperage of the electrostatic precipitator collection plates during the particulate matter performance test. Calculate the average electric power value (secondary voltage × secondary current = secondary electric power) for each test run. The operating limit for the electrostatic precipitator is calculated as the lowest 1-hour average secondary electric power measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(e) If you use activated carbon sorbent injection to comply with the emission limitations, you must measure the sorbent flow rate during the performance testing. The operating limit for the carbon sorbent injection is calculated as the lowest 1-hour average sorbent flow rate measured during the most recent performance test demonstrating compliance with the mercury emission limitations.

(f) If you use selective noncatalytic reduction to comply with the emission limitations, you must measure the charge rate, the secondary chamber temperature (if applicable to your CISWI unit), and the reagent flow rate during the nitrogen oxides performance testing. The operating limits for the selective noncatalytic reduction are calculated as the lowest 1-hour average charge rate, secondary chamber temperature, and reagent flow rate measured during the most recent performance test demonstrating compliance with the nitrogen oxides emission limitations.

(g) If you do not use a wet scrubber, electrostatic precipitator, or fabric filter to comply with the emission limitations, and if you do not determine compliance with your particulate matter emission limitation with a particulate matter continuous emission monitoring system, you must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).

[65 FR 75350, Dec. 1, 2000, as amended at 76 FR 15451, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9179, Feb. 7, 2013, § 60.2110 was amended by revising paragraphs (a)(2), (e), and (f); redesignating paragraph (g) as paragraph (h) and revising newly designated paragraph (h); adding paragraphs (g) and (i), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§ 60.2110 What operating limits must I meet and by when?

(a) * * *

(2) Minimum pressure drop across the wet particulate matter scrubber, which is calculated as the lowest 1-hour average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum

amperage to the wet scrubber, which is calculated as the lowest 1-hour average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

* * * * *

(e) If you use activated carbon sorbent injection to comply with the emission limitations, you must measure the sorbent flow rate during the performance testing. The operating limit for the carbon sorbent injection is calculated as the lowest 1-hour average sorbent flow rate measured during the most recent performance test demonstrating compliance with the mercury emission limitations. For energy recovery units, when your unit operates at lower loads, multiply your sorbent injection rate by the load fraction, as defined in this subpart, to determine the required injection rate (e.g., for 50 percent load, multiply the injection rate operating limit by 0.5).

(f) If you use selective noncatalytic reduction to comply with the emission limitations, you must measure the charge rate, the secondary chamber temperature (if applicable to your CISWI unit), and the reagent flow rate during the nitrogen oxides performance testing. The operating limits for the selective noncatalytic reduction are calculated as the highest 1-hour average charge rate, lower secondary chamber temperature, and lowest reagent flow rate measured during the most recent performance test demonstrating compliance with the nitrogen oxides emission limitations.

(g) If you use a dry scrubber to comply with the emission limitations, you must measure the injection rate of each sorbent during the performance testing. The operating limit for the injection rate of each sorbent is calculated as the lowest 1-hour average injection rate or each sorbent measured during the most recent performance test demonstrating compliance with the hydrogen chloride emission limitations. For energy recovery units, when your unit operates at lower loads, multiply your sorbent injection rate by the load fraction, as defined in this subpart, to determine the required injection rate (e.g., for 50 percent load, multiply the injection rate operating limit by 0.5).

(h) If you do not use a wet scrubber, electrostatic precipitator, or fabric filter to comply with the emission limitations, and if you do not determine compliance with your particulate matter emission limitation with a particulate matter CEMS, you must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).

(i) If you use a PM CPMS to demonstrate compliance, you must establish your PM CPMS operating limit and determine compliance with it according to paragraphs (i)(1) through (5) of this section.

(1) Determine your operating limit as the average PM CPMS output value recorded during the performance test or at a PM CPMS output value corresponding to 75% of the emission limit if your PM performance test demonstrates compliance below 75% of the emission limit. You must verify an existing or establish a new operating limit after each repeated performance test. You must repeat the performance test annually and reassess and adjust the site-specific operating limit in accordance with the results of the performance test.

(A) Your PM CPMS must provide a 4–20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps.

(B) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to at least two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit.

(C) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all your PM CPMS output values for three corresponding 2-hour Method 5I test runs).

(2) If the average of your three PM performance test runs are below 75% of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or performance test with the procedures in (i)(1)through (5) of this section.

(i) Determine your instrument zero output with one of the following procedures:

(A) Zero point data for *in-situ* instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(B) Zero point data for extractive instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(C) The zero point can also can be established obtained by performing manual reference method measurements when the flue gas is free of PM emissions or contains very

low PM concentrations (*e.g.*, when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(D) If none of the steps in paragraphs (i)(2)(i) through (iv) of this section are possible, you must use a zero output value provided by the manufacturer.

(ii) Determine your PM CPMS instrument average in milliamps, and the average of your corresponding three PM compliance test runs, using equation 1.

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} X_1 , \bar{y} = \frac{1}{n}\sum_{i=1}^{n} Y_1 \qquad \text{(Eq. 1)}$$

Where:

X_1 = the PM CPMS data points for the three runs constituting the performance test,

Y_1 = the PM concentration value for the three runs constituting the performance test, and

n = the number of data points.

(iii) With your instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM concentration from your three compliance tests, determine a relationship of lb/Mmbtu per milliamp with equation 2.

$$\mathbf{R} = \frac{Y_1}{(X_1 - z)} \qquad \text{(Eq. 2)}$$

Where:

R = the relative mg/dscm per milliamp for your PM CPMS,

Y_1 = the three run average mg/dscm PM concentration,

X_1 = the three run average milliamp output from you PM CPMS, and

z = the milliamp equivalent of your instrument zero determined from (2)(i).

(iv) Determine your source specific 30-day rolling average operating limit using the mg/dscm per milliamp value from Equation 2 in equation 3, below. This sets your operating limit at the PM CPMS output value corresponding to 75% of your emission limit.

$$O_l = z + \frac{0.75(L)}{R} \qquad \text{(Eq. 3)}$$

Where:

O_l = the operating limit for your PM CPMS on a 30-day rolling average, in milliamps.

L = your source emission limit expressed in lb/Mmbtu,

z = your instrument zero in milliamps, determined from (2)(a), and

R = the relative mg/dscm per milliamp for your PM CPMS, from Equation 3.

(3) If the average of your three PM compliance test runs is at or above 75% of your PM emission limit you must determine your operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using equation 4 and you must submit all compliance test and PM CPMS data according to the reporting requirements in paragraph (i)(5) of this section.

$$O_h = \frac{1}{n}\sum_{i=1}^{n} X_1 \quad \text{(Eq. 4)}$$

Where:

X_1 = the PM CPMS data points for all runs i,
n = the number of data points, and
O_h = your site specific operating limit, in milliamps.

(4) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (e.g., milliamps, PM concentration, raw data signal) on a 30-day rolling average basis.

(5) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g., beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.

§ 60.2115 What if I do not use a wet scrubber, fabric filter, activated carbon injection, selective noncatalytic reduction, or an electrostatic precipitator to comply with the emission limitations?

If you use an air pollution control device other than a wet scrubber, activated carbon injection, selective noncatalytic reduction, fabric filter, or an electrostatic precipitator or limit emissions in some other manner, including material balances, to comply with the emission limitations under § 60.2105, you must petition the EPA Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. You must not conduct the initial performance test until after the petition has been approved by the Administrator. Your petition must include the five items listed in paragraphs (a) through (e) of this section.

(a) Identification of the specific parameters you propose to use as additional operating limits.

(b) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters and how limits on these parameters will serve to limit emissions of regulated pollutants.

(c) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the operating limits on these parameters.

(d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

[76 FR 15451, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9180, Feb. 7, 2013, § 60.2115 was amended by revising the section heading and the introductory text, effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2115 What if I do not use a wet scrubber, fabric filter, activated carbon injection, selective noncatalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations?

If you use an air pollution control device other than a wet scrubber, activated carbon injection, selective noncatalytic reduction, fabric filter, an electrostatic precipitator, or a dry scrubber or limit emissions in some other manner, including material balances, to comply with the emission limitations under § 60.2105, you must petition the EPA Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. You must submit the petition at least sixty days before the performance test is scheduled to begin. Your petition must include the five items listed in paragraphs (a) through (e) of this section.

§ 60.2120 Affirmative Defense for Exceedance of an Emission Limit During Malfunction.

In response to an action to enforce the standards set forth in paragraph § 60.2105, you may assert an affirmative defense to a claim for civil penalties for exceedances of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The excess emissions:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when the applicable emission limitations were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions; and

(4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health; and

(6) All emissions and/or parameter monitoring and systems, as well as control systems, were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the facility was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) Notification. The owner or operator of the facility experiencing an exceedance of its emission limit(s) during a malfunction shall notify the Administrator by telephone or facsimile (FAX) transmission as soon as possible, but no later than two business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 60.2105 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

[76 FR 15452, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9181, Feb. 7, 2013, § 60.2120 was revised, effective Aug. 7,

2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2120 Affirmative defense for violation of emission standards during malfunction.

In response to an action to enforce the standards set forth in paragraph § 60.2105 you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) *Assertion of affirmative defense.* To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and (iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred; and

(3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

PERFORMANCE TESTING

§ 60.2125 How do I conduct the initial and annual performance test?

(a) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) You must document that the waste burned during the performance test is representative of the waste burned under normal operating conditions by maintaining a log of the quantity of waste burned (as required in § 60.2175(b)(1)) and the types of waste burned during the performance test.

(c) All performance tests must be conducted using the minimum run duration specified in table 1 of this subpart or tables 5 through 8 of this subpart.

(d) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(e) Method 3A or 3B of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B of appendix A of this part must be used simultaneously with each method.

(f) All pollutant concentrations, except for opacity, must be adjusted to 7 percent oxygen using Equation 1 of this section:

$$C_{adj} = C_{meas} \ (20.9–7)/(20.9-\%O_2) \qquad \text{(Eq. 1)}$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;

C_{meas} = pollutant concentration measured on a dry basis;

(20.9–7) = 20.9 percent oxygen − 7 percent oxygen (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

$\%O_2$ = oxygen concentration measured on a dry basis, percent.

(g) You must determine dioxins/furans toxic equivalency by following the procedures in paragraphs (g)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan tetra-through octa-chlorinated isomer emitted using EPA Method 23 at 40 CFR part 60, appendix A–7.

(2) For each dioxin/furan (tetra-through octa-chlorinated) isomer measured in accordance with paragraph (g)(1) of this section, multiply the isomer concentration by its corresponding toxic equivalency factor specified in table 3 of this subpart.

(3) Sum the products calculated in accordance with paragraph (g)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(h) Method 22 at 40 CFR part 60, appendix A–7 of this part must be used to determine compliance with the fugitive ash emission limit in table 1 of this subpart or tables 5 through 8 of this subpart.

(i) If you have an applicable opacity operating limit, you must determine compliance with the opacity limit using Method 9 at 40 CFR part 60, appendix A–4 of this part, based on three 1-hour blocks consisting of ten 6-minute average opacity values, unless you are required to install a continuous opacity monitoring system, consistent with §§ 60.2145 and 60.2165.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15453, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9181, Feb. 7, 2013, § 60.2125 was amended by revising paragraph (g) introductory text; redesignating paragraphs (g)(2) and (3) as paragraphs (g)(3) and (4), respectively; revising newly designated paragraphs (g)(3) and (4); adding new paragraph (g)(2); revising paragraph (i); adding paragraph (j), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§ 60.2125 How do I conduct the initial and annual performance test?

* * * * *

(g) You must determine dioxins/furans toxic equivalency by following the procedures in paragraphs (g)(1) through (4) of this section.

* * * * *

(2) Quantify isomers meeting identification criteria 2, 3, 4, and 5 in Section 5.3.2.5 of Method 23, regardless of whether the isomers meet identification criteria 1 and 7. You must quantify the isomers per Section 9.0 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers not meeting identification criteria 1 or 7 of Section 5.3.2.5.)

(3) For each dioxin/furan (tetra-through octa-chlorinated) isomer measured in accordance with paragraph (g)(1) and (2) of this section, multiply the isomer concentration by its corresponding toxic equivalency factor specified in table 3 of this subpart.

(4) Sum the products calculated in accordance with paragraph (g)(3) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

* * * * *

(i) If you have an applicable opacity operating limit, you must determine compliance with the opacity limit using Method 9 at 40 CFR part 60, appendix A–4 of this part, based on three 1-hour blocks consisting of ten 6-minute average opacity values, unless you are required to install a continuous opacity monitoring system, consistent with §§ 60.2145 and 60.2165.

(j) You must determine dioxins/furans total mass basis by following the procedures in paragraphs (j)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan tetra-through octa-chlorinated isomer emitted using EPA Method 23 at 40 CFR part 60, appendix A–7.

(2) Quantify isomers meeting identification criteria 2, 3, 4, and 5 in Section 5.3.2.5 of Method 23, regardless of whether the isomers meet identification criteria 1 and 7. You must quantify the isomers per Section 9.0 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers not meeting identification criteria 1 or 7 of Section 5.3.2.5.)

(3) Sum the quantities measured in accordance with paragraphs (j)(1) and (2) of this section to obtain the total concentration of dioxins/furans emitted in terms of total mass basis.

§ 60.2130 How are the performance test data used?

You use results of performance tests to demonstrate compliance with the emission limitations in table 1 of this subpart or tables 5 through 8 of this subpart.

[76 FR 15453, Mar. 21, 2011]

INITIAL COMPLIANCE REQUIREMENTS

§ 60.2135 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?

You must conduct a performance test, as required under §§ 60.2125 and 60.2105 to determine compliance with the emission limitations in table 1 of this subpart or tables 5 through 8 of this subpart, to establish compliance with any opacity operating limit in § 60.2110,and to establish operating limits using the procedures in §§ 60.2110 or 60.2115. The performance test must be conducted using the test methods listed in table 1 of this subpart or tables 5 through 8 of this subpart and the procedures in § 60.2125. The use of the bypass stack during a performance test shall invalidate the performance test. You must conduct a performance evaluation of each continuous monitoring system within 60 days of installation of the monitoring system.

[76 FR 15453, Mar. 21, 2011]

§ 60.2140 By what date must I conduct the initial performance test?

(a) The initial performance test must be conducted within 60 days after your CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

(b) If you commence or recommence combusting a solid waste at an existing combustion unit at any commercial or industrial facility, and you conducted a test consistent with the provisions of this subpart while combusting the solid waste within the 6 months preceding the reintroduction of that solid waste in the combustion chamber, you do not need to retest until 6 months from the date you reintroduce that solid waste.

(c) If you commence combusting or recommence combusting a solid waste at an existing combustion unit at any commercial or industrial facility and you have not conducted a performance test consistent with the provisions of this subpart while combusting the given solid waste within the 6 months preceding the reintroduction of that solid waste in the combustion chamber, you must conduct a performance test within 60 days commencing or recommencing solid waste combustion.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15453, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9181, Feb. 7, 2013, § 60.2140 was amended by revising paragraph (c), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§ 60.2140 By what date must I conduct the initial performance test?

* * * * *

(c) If you commence combusting or recommence combusting a solid waste at an existing combustion unit at any commercial or industrial facility and you have not conducted a performance test consistent with the provisions of this subpart while combusting the solid waste within the 6 months preceding the reintroduction of that solid waste in the combustion chamber, you must conduct a performance test within 60 days commencing or recommencing solid waste combustion.

§ 60.2141 By what date must I conduct the initial air pollution control device inspection?

(a) The initial air pollution control device inspection must be conducted within 60 days after installation of the control device and the associated CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after the device's initial startup.

(b) Within 10 operating days following an air pollution control device inspection, all necessary repairs must be completed unless the owner or operator obtains written approval from the state agency establishing a date whereby all necessary repairs of the designated facility must be completed.

[76 FR 15453, Mar. 21, 2011]

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.2145 How do I demonstrate continuous compliance with the emission limitations and the operating limits?

(a) Compliance with standards.

(1) The emission standards and operating requirements set forth in this subpart apply at all times.

(2) If you cease combusting solid waste, you may opt to remain subject to the provisions of this subpart. Consistent with the definition of CISWI unit, you are subject to the requirements of this subpart at least 6 months following the last date of solid waste combustion. Solid waste combustion is ceased when solid waste is not in the combustion chamber (*i.e.*, the solid waste feed to the combustor has been cut off for a period of time not less than the solid waste residence time).

(3) If you cease combusting solid waste, you must be in compliance with any newly applicable standards on the effective date of the waste-to-fuel switch. The effective date of the waste-to-fuel switch is a date selected by you, that must be at least 6 months from the date that you ceased combusting solid waste, consistent with § 60.2145(a)(2). Your source must remain in compliance with this subpart until the effective date of the waste-to-fuel switch.

(4) If you own or operate an existing commercial or industrial combustion unit that combusted a fuel or non-waste material, and you commence or recommence combustion of solid waste, you are subject to the provisions of this subpart as of the first day you introduce or reintroduce solid waste to the combustion chamber, and this date constitutes the effective date of the fuel-to-waste switch. You must complete all initial compliance demonstrations for any section 112 standards that are applicable to your facility before you commence or recommence combustion of solid waste. You must provide 30 days prior notice of the effective date of the waste-to-fuel switch. The notification must identify:

(i) The name of the owner or operator of the CISWI unit, the location of the source, the emissions unit(s) that will cease burning solid waste, and the date of the notice;

(ii) The currently applicable subcategory under this subpart, and any 40 CFR part 63 subpart and subcategory that will be applicable after you cease combusting solid waste;

(iii) The fuel(s), non-waste material(s) and solid waste(s) the CISWI unit is currently combusting and has combusted over the past 6 months, and the fuel(s) or non-waste materials the unit will commence combusting;

(iv) The date on which you became subject to the currently applicable emission limits;

(v) The date upon which you will cease combusting solid waste, and the date (if different) that you intend for any new requirements to become applicable (*i.e.*, the effective date of the waste-to-fuel switch), consistent with paragraphs (a)(2) and (3)of this section.

(5) All air pollution control equipment necessary for compliance with any newly applicable emissions limits which apply as a result of the cessation or commencement or recommencement of combusting solid waste must be installed and operational as of the effective date of the waste-to-fuel, or fuel-to-waste switch.

(6) All monitoring systems necessary for compliance with any newly applicable monitoring requirements which apply as a result of the cessation or commencement or recommencement of combusting solid waste must be installed and operational as of the effective date of the waste-to-fuel, or fuel-to-waste switch. All calibration and drift checks must be performed as of the effective date of the waste-to-fuel, or fuel-to-waste switch. Relative accuracy tests must be performed as of the performance test deadline for PM CEMS. Relative accuracy testing for other CEMS need not be repeated if that testing was previously performed consistent with Clean Air Act section 112 monitoring requirements or monitoring requirements under this subpart.

(b) You must conduct an annual performance test for the pollutants listed in table 1 of this subpart or tables 5 through 8 of this subpart and opacity for each CISWI unit as required under § 60.2125. The annual performance test

must be conducted using the test methods listed in table 1 of this subpart or tables 5 through 8 of this subpart and the procedures in § 60.2125. Annual performance tests are not required if you use continuous emission monitoring systems or continuous opacity monitoring systems to determine compliance.

(c) You must continuously monitor the operating parameters specified in § 60.2110 or established under § 60.2115 and as specified in § 60.2170. Use three-hour block average values to determine compliance (except for baghouse leak detection system alarms) unless a different averaging period is established under § 60.2115. Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests.

(d) You must burn only the same types of waste used to establish operating limits during the performance test.

(e) For energy recovery units, incinerators, and small remote units, you must perform an annual visual emissions test for ash handling.

(f) For energy recovery units, you must conduct an annual performance test for opacity (except where particulate matter continuous emission monitoring system or continuous opacity monitoring systems are used are used) and the pollutants listed in table 6 of this subpart.

(g) You must demonstrate continuous compliance with the carbon monoxide emission limit using a carbon monoxide continuous emission monitoring system according to the following requirements:

(1) You must measure emissions according to § 60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen. You must demonstrate initial compliance with the carbon monoxide emissions limit using a 30-day rolling average of these 1-hour arithmetic average emission concentrations, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part.

(2) Operate the carbon monoxide continuous emission monitoring system in accordance with the requirements of performance specification 4A of appendix B of this part and quality assurance procedure 1 of appendix F of this part.

(h) For energy recovery units with design capacities greater than or equal to 250 MMBtu/hr and waste-burning kilns, demonstrate continuous compliance with the particulate matter emissions limit using a particulate matter continuous emission monitoring system according to the procedures in § 60.2165(n).

(i) For energy recovery units with design capacities greater than or equal to 10 MMBtu/hour, if you have an opacity operating limit, you must install, operate, certify and maintain a continuous opacity monitoring system (COMS) according to the procedures in § 60.2165.

(j) For waste-burning kilns, you must conduct an annual performance test for cadmium, lead, dioxins/furans and hydrogen chloride as listed in table 7 of this subpart. You must determine compliance with hydrogen chloride using a hydrogen chloride continuous emission monitoring system if you do not use an acid gas wet scrubber. You must determine compliance with nitrogen oxides, sulfur dioxide, carbon monoxide, and particulate matter using continuous emission monitoring systems. You must determine compliance with the mercury emissions limit using a mercury continuous emission monitoring system according to the following requirements:

(1) Operate a continuous emission monitoring system in accordance with performance specification 12A of 40 CFR part 60, appendix B or a sorbent trap based integrated monitor in accordance with performance specification 12B of 40 CFR part 60, appendix B. The duration of the performance test must be a calendar month. For each calendar month in which the waste-burning kiln operates, hourly mercury concentration data, and stack gas volumetric flow rate data must be obtained.

(2) Owners or operators using a mercury continuous emission monitoring system must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the mercury mass emissions rate to the atmosphere according to the requirements of performance specifications 6 and 12A of 40 CFR part 60, appendix B, and quality assurance procedure 6 of 40 CFR part 60, appendix F.

(3) The owner or operator of a waste-burning kiln must demonstrate initial compliance by operating a mercury continuous emission monitoring system while the raw mill of the in-line kiln/raw mill is operating under normal conditions and while the raw mill of the in-line kiln/raw mill is not operating.

(k) If you use an air pollution control device to meet the emission limitations in this subpart, you must conduct an initial and annual inspection of the air pollution control device. The inspection must include, at a minimum, the following:

(1) Inspect air pollution control device(s) for proper operation.

(2) Develop a site-specific monitoring plan according to the requirements in paragraph (l) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under §60.13(i).

(l) For each continuous monitoring system required in this section, you must develop and submit to the EPA Administrator for approval a site-specific monitoring plan according to the requirements of this paragraph (l) that addresses paragraphs (l)(1)(i) through (vi) of this section.

(1) You must submit this site-specific monitoring plan at least 60 days before your initial performance evaluation of your continuous monitoring system.

(i) Installation of the continuous monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer and the data collection and reduction systems.

(iii) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations).

(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of §60.11(d).

(v) Ongoing data quality assurance procedures in accordance with the general requirements of §60.13.

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §60.7(b), (c), (c)(1), (c)(4), (d), (e), (f), and (g).

(2) You must conduct a performance evaluation of each continuous monitoring system in accordance with your site-specific monitoring plan.

(3) You must operate and maintain the continuous monitoring system in continuous operation according to the site-specific monitoring plan.

(m) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (l) and (m)(1) through (4) of this section.

(1) Install the flow sensor and other necessary equipment in a position that provides a representative flow.

(2) Use a flow sensor with a measurement sensitivity of no greater than 2 percent of the expected process flow rate.

(3) Minimize the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(4) Conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(n) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (l) and (n)(1) through (6) of this section.

(1) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (*e.g.*, PM scrubber pressure drop).

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(3) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of

water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.

(4) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (*e.g.*, check for pressure tap pluggage daily).

(5) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(6) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in your monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.

(o) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (l) and (o)(1) through (4) of this section.

(1) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.

(2) Ensure the sample is properly mixed and representative of the fluid to be measured.

(3) Conduct a performance evaluation of the pH monitoring system in accordance with your monitoring plan at least once each process operating day.

(4) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than quarterly.

(p) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator, you must meet the requirements in paragraphs (l) and (p)(1) through (2) of this section.

(1) Install sensors to measure (secondary) voltage and current to the precipitator collection plates.

(2) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(q) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (*e.g.*, weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (l) and (q)(1) and (2) of this section.

(1) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.

(2) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(r) If you elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (l) and (r)(1) through (5) of this section.

(1) Install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (*e.g.*, for a positive pressure fabric filter) of the fabric filter.

(2) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(3) Conduct a performance evaluation of the bag leak detection system in accordance with your monitoring plan and consistent with the guidance provided in EPA–454/R–98–015 (incorporated by reference, *see* § 60.17).

(4) Use a bag leak detection system equipped with a device to continuously record the output signal from the sensor.

(5) Use a bag leak detection system equipped with a system that will sound an alarm when an increase in relative particulate matter emissions over a preset level is detected. The alarm

must be located where it is observed readily by plant operating personnel.

(s) For facilities using a continuous emission monitoring system to demonstrate compliance with the sulfur dioxide emission limit, compliance with the sulfur dioxide emission limit may be demonstrated by using the continuous emission monitoring system specified in § 60.2165 to measure sulfur dioxide and calculating a 30-day rolling average emission concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, Appendix A–7 of this part. The sulfur dioxide continuous emission monitoring system must be operated according to performance specification 2 in appendix B of this part and must follow the procedures and methods specified in this paragraph(s). For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet sulfur dioxide continuous emission monitoring systems should be no greater than 20 percent of the mean value of the reference method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference between the reference method and the continuous emission monitoring systems, whichever is greater.

(1) During each relative accuracy test run of the continuous emission monitoring system required by performance specification 2 in appendix B of this part, collect sulfur dioxide and oxygen (or carbon dioxide) data concurrently (or within a 30- to 60-minute period) with both the continuous emission monitors and the test methods specified in paragraphs (s)(1)(i) and (s)(1)(ii) of this section.

(i) For sulfur dioxide, EPA Reference Method 6 or 6C, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, *see* § 60.17) must be used.

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, *see* § 60.17), must be used.

(2) The span value of the continuous emission monitoring system at the inlet to the sulfur dioxide control device must be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the unit subject to this rule. The span value of the continuous emission monitoring system at the outlet of the sulfur dioxide control device must be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the unit subject to this rule.

(3) Conduct accuracy determinations quarterly and calibration drift tests daily in accordance with procedure 1 in appendix F of this part.

(t) For facilities using a continuous emission monitoring system to demonstrate continuous compliance with the nitrogen oxides emission limit, compliance with the nitrogen oxides emission limit may be demonstrated by using the continuous emission monitoring system specified in § 60.2165 to measure nitrogen oxides and calculating a 30-day rolling average emission concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part. The nitrogen oxides continuous emission monitoring system must be operated according to performance specification 2 in appendix B of this part and must follow the procedures and methods specified in paragraphs (t)(1) through (t)(5) of this section.

(1) During each relative accuracy test run of the continuous emission monitoring system required by performance specification 2 of appendix B of this part, collect nitrogen oxides and oxygen (or carbon dioxide) data concurrently (or within a 30- to 60-minute period) with both the continuous emission monitoring systems and the test methods specified in paragraphs (t)(1)(i) and (t)(1)(ii) of this section.

(i) For nitrogen oxides, EPA Reference Method 7 or 7E at 40 CFR part 60, appendix A–4 must be used.

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B at 40 CFR part 60, appendix A–3, or as an alternative ANSI/ASME PTC 19–10.1981 (incorporated by reference, *see* § 60.17), as applicable, must be used.

(2) The span value of the continuous emission monitoring system must be 125 percent of the maximum estimated hourly potential nitrogen oxide emissions of the unit.

(3) Conduct accuracy determinations quarterly and calibration drift tests daily in accordance with procedure 1 in appendix F of this part.

(4) The owner or operator of an affected facility may request that compliance with the nitrogen oxides emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels must be established during the initial performance test according to the procedures and methods specified in paragraphs (t)(4)(i) through (t)(4)(iv) of this section. This relationship may be re-established during performance compliance tests.

(i) The fuel factor equation in Method 3B must be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Method 3A or 3B, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, *see* § 60.17), as applicable, must be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

(ii) Samples must be taken for at least 30 minutes in each hour.

(iii) Each sample must represent a 1-hour average.

(iv) A minimum of three runs must be performed.

(u) For facilities using a continuous emission monitoring system to demonstrate continuous compliance with any of the emission limits of this subpart, you must complete the following:

(1) Demonstrate compliance with the appropriate emission limit(s) using a 30-day rolling average, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part.

(2) Operate all continuous emission monitoring systems in accordance with the applicable procedures under appendices B and F of this part.

(v) Use of the bypass stack at any time is an emissions standards deviation for particulate matter, HCl, Pb, Cd, Hg, NO_X, SO_2, and dioxin/furans.

[76 FR 15453, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9182, Feb. 7, 2013, § 60.2145 was amended by revising paragraph (a)(6); revising paragraphs (b) through (d); revising paragraphs (f) through (j); revising paragraph (m)(2); revising paragraph (n)(4); revising paragraphs (s) introductory text, (s)(1) introductory text, and (s)(2); revising paragraph (t) introductory text and (t)(1) introductory text; revising paragraph (u); adding paragraphs (w) and (x), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§ 60.2145 How do I demonstrate continuous compliance with the emission limitations and the operating limits?

(a) * * *

(6) All monitoring systems necessary for compliance with any newly applicable monitoring requirements which apply as a result of the cessation or commencement or recommencement of combusting solid waste must be installed and operational as of the effective date of the waste-to-fuel, or fuel-to-waste switch. All calibration and drift checks must be performed as of the effective date of the waste-to-fuel, or fuel-to-waste switch. Relative accuracy tests must be performed as of the performance test deadline for PM CEMS (if PM CEMS are elected to demonstrate continuous compliance with the particulate matter emission limits). Relative accuracy testing for other CEMS need not be repeated if that testing was previously performed consistent with Clean Air Act section 112 monitoring requirements or monitoring requirements under this subpart.

(b) You must conduct an annual performance test for the pollutants listed in table 1 of this subpart or tables 5 through 8 of this subpart and opacity for each CISWI unit as required under § 60.2125. The annual performance test must be conducted using the test methods listed in table 1 of this subpart or tables 5 through 8 of this subpart and the procedures in § 60.2125. Annual performance tests are not required if you use CEMS or continuous opacity monitoring systems to determine compliance.

(c) You must continuously monitor the operating parameters specified in § 60.2110 or established under § 60.2115 and as specified in § 60.2170. Use 3-hour block average values to determine compliance (except for baghouse leak detection system alarms) unless a different averaging period is established under § 60.2115 or, for energy recovery units, where the averaging time for each operating parameter is a 30-day rolling, calculated each hour as the average of the previous 720 operating hours. Operation above the established maximum, below the established minimum, or outside the allowable range of operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission

and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests.

(d) You must burn only the same types of waste and fuels used to establish subcategory applicability (for energy recovery units) and operating limits during the performance test.

* * * * *

(f) For energy recovery units, you must conduct an annual performance test for opacity (except where particulate matter CEMS or continuous opacity monitoring systems are used are used) and the pollutants listed in table 6 of this subpart.

(g) You may elect to demonstrate continuous compliance with the carbon monoxide emission limit using a carbon monoxide CEMS according to the following requirements:

(1) You must measure emissions according to § 60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. You must demonstrate initial compliance with the carbon monoxide emissions limit using a 30-day rolling average of these 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part.

(2) Operate the carbon monoxide CEMS in accordance with the requirements of performance specification 4A of appendix B of this part and quality assurance procedure 1 of appendix F of this part.

(h) Coal and liquid/gas energy recovery units with average annual heat input rates greater than or equal to 250 MMBtu/hr may elect to demonstrate continuous compliance with the particulate matter emissions limit using a particulate matter CEMS according to the procedures in § 60.2165(n) instead of the particulate matter continuous parameter monitoring system (CPMS) specified in § 60.2145. Coal and liquid/gas energy recovery units with annual average heat input rates less than 250 MMBtu/hr, incinerators, and small remote incinerators may also elect to demonstrate compliance using a particulate matter CEMS according to the procedures in § 60.2165(n) instead of particulate matter testing with EPA Method 5 at 40 CFR part 60, appendix A–3 and, if applicable, the continuous opacity monitoring requirements in paragraph (i) of this section.

(i) For energy recovery units with annual average heat input rates greater than or equal to 10 MMBtu/hour and less than 250 MMBtu/hr, you must install, operate, certify and maintain a continuous opacity monitoring system (COMS) according to the procedures in § 60.2165.

(j) For waste-burning kilns, you must conduct an annual performance test for cadmium, lead, dioxins/furans and hydrogen chloride as listed in table 7 of this subpart. You must determine compliance with hydrogen chloride using a hydrogen chloride CEMS if you do not use an acid gas wet scrubber or dry scrubber. You must determine compliance with nitrogen oxides, sulfur dioxide, and carbon monoxide using CEMS. You must determine compliance with particulate matter using CPMS. You must determine compliance with the mercury emissions limit using a mercury CEMS according to the following requirements:

(1) Operate a CEMS system in accordance with performance specification 12A of 40 CFR part 60, appendix B or a sorbent trap based integrated monitor in accordance with performance specification 12B of 40 CFR part 60, appendix B. The duration of the performance test must be a calendar month. For each calendar month in which the waste-burning kiln operates, hourly mercury concentration data, and stack gas volumetric flow rate data must be obtained. You must demonstrate compliance with the mercury emissions limit using a 30-day rolling average of these 1-hour mercury concentrations, including CEMS data during startup and shutdown as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content.

(2) Owners or operators using a mercury CEMS must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the mercury mass emissions rate to the atmosphere according to the requirements of performance specifications 6 and 12A of 40 CFR part 60, appendix B, and quality assurance procedure 6 of 40 CFR part 60, appendix F.

(3) The owner or operator of a waste-burning kiln must demonstrate initial compliance by operating a mercury CEMS while the raw mill of the in-line kiln/raw mill is operating under normal conditions and including at least one period when the raw mill is off.

* * * * *

(m) * * *

(2) Use a flow sensor with a measurement sensitivity at full scale of no greater than 2 percent.

* * * * *

(n) * * *

(4) Perform checks at the frequency outlined in your site-specific monitoring plan to ensure pressure measurements are not obstructed (e.g., check for pressure tap pluggage daily).

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(s) For facilities using a CEMS to demonstrate compliance with the sulfur dioxide emission limit, compliance with the sulfur dioxide emission limit may be demonstrated by using the CEMS specified in § 60.2165 to measure sulfur dioxide. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. You must calculate a 30-day rolling average of the 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, Appendix A–7 of this part. The sulfur dioxide CEMS must be operated according to performance specification 2 in appendix B of this part and must follow the procedures and methods specified in this paragraph (s). For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet sulfur dioxide CEMS should be no greater than 20 percent of the mean value of the reference method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference between the reference method and the CEMS, whichever is greater.

(1) During each relative accuracy test run of the CEMS required by performance specification 2 in appendix B of this part, collect sulfur dioxide and oxygen (or carbon dioxide) data concurrently (or within a 30- to 60-minute period) with both the CEMS and the test methods specified in paragraphs (s)(1)(i) and (ii) of this section.

* * * * *

(2) The span value of the CEMS at the inlet to the sulfur dioxide control device must be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the unit subject to this rule. The span value of the CEMS at the outlet of the sulfur dioxide control device must be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the unit subject to this rule.

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(t) For facilities using a CEMS to demonstrate continuous compliance with the nitrogen oxides emission limit, compliance with the nitrogen oxides emission limit may be demonstrated by using the CEMS specified in § 60.2165 to measure nitrogen oxides. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. You must calculate a 30-day rolling average of the 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part. The nitrogen oxides CEMS must be operated according to performance specification 2 in appendix B of this part and must follow the procedures and methods specified in paragraphs (t)(1) through (5) of this section.

(1) During each relative accuracy test run of the CEMS required by performance specification 2 of appendix B of this part, collect nitrogen oxides and oxygen (or carbon dioxide) data concurrently (or within a 30- to 60-minute period) with both the CEMS and the test methods specified in paragraphs (t)(1)(i) and (ii) of this section.

* * * * *

(u) For facilities using a CEMS to demonstrate continuous compliance with any of the emission limits of this subpart, you must complete the following:

(1) Demonstrate compliance with the appropriate emission limit(s) using a 30-day rolling average of 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part. CEMS data during startup and shutdown, as defined in the subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content.

(2) Operate all CEMS in accordance with the applicable procedures under appendices B and F of this part.

* * * * *

(w) For energy recovery units with a design heat input capacity of 100 MMBtu per hour or greater that do not use a carbon monoxide CEMS, you must install, operate, and maintain a oxygen analyzer system as defined in § 60.2265 according to the procedures in paragraphs (w)(1) through (4) of this section.

(1) The oxygen analyzer system must be installed by the initial performance test date specified in § 60.2675.

(2) You must operate the oxygen trim system within compliance with paragraph (w)(3) of this section at all times.

(3) You must maintain the oxygen level such that the 30-day rolling average that is established as the operating limit for oxygen

is not below the lowest hourly average oxygen concentration measured during the most recent CO performance test.

(4) You must calculate and record a 30-day rolling average oxygen concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 of Appendix A–7 of this part.

(x) For energy recovery units with annual average heat input rates greater than or equal to 250 MMBtu/hour and waste-burning kilns, you must install, calibrate, maintain, and operate a PM CPMS and record the output of the system as specified in paragraphs (x)(1) through (8) of this section. For other energy recovery units, you may elect to use PM CPMS operated in accordance with this section. PM CPMS are suitable in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure).

(1) Install, calibrate, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 60.2145(l) and (x)(1)(i) through (iii) of this section.

(i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation detection of the exhaust gas or representative sample. The reportable measurement output from the PM CPMS must be expressed as milliamps.

(ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.

(iii) The PM CPMS must be capable of detecting and responding to particulate matter concentrations of no greater than 0.5 mg/actual cubic meter.

(2) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, you must adjust the site-specific operating limit in accordance with the results of the performance test according to the procedures specified in § 60.2110.

(3) Collect PM CPMS hourly average output data for all energy recovery unit or waste-burning kiln operating hours. Express the PM CPMS output as milliamps.

(4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output collected during all energy recovery unit or waste-burning kiln operating hours data (milliamps).

(5) You must collect data using the PM CPMS at all times the energy recovery unit or waste-burning kiln is operating and at the intervals specified in paragraph (x)(1)(ii) of this section, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), and any scheduled maintenance as defined in your site-specific monitoring plan.

(6) You must use all the data collected during all energy recovery unit or waste-burning kiln operating hours in assessing the compliance with your operating limit except:

(i) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or quality control activities conducted during monitoring system malfunctions are not used in calculations (report any such periods in your annual deviation report);

(ii) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or quality control activities conducted during out-of-control periods are not used in calculations (report emissions or operating levels and report any such periods in your annual deviation report);

(iii) Any PM CPMS data recorded during periods of CEMS data during startup and shutdown, as defined in this subpart.

(7) You must record and make available upon request results of PM CPMS system performance audits, as well as the dates and duration of periods from when the PM CPMS is out of control until completion of the corrective actions necessary to return the PM CPMS to operation consistent with your site-specific monitoring plan.

(8) For any deviation of the 30-day rolling average PM CPMS average value from the established operating parameter limit, you must:

(i) Within 48 hours of the deviation, visually inspect the air pollution control device;

(ii) If inspection of the air pollution control device identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(iii) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify. Within 45 days of the deviation, you must re-establish the CPMS operating limit. You are not required to conduct additional testing for any deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.

(iv) PM CPMS deviations leading to more than four required performance tests in a 12-month process operating period (rolling

monthly) constitute a violation of this subpart.

§ 60.2150 By what date must I conduct the annual performance test?

You must conduct annual performance tests between 11 and 13 months of the previous performance test.

[76 FR 15456, Mar. 21, 2011]

§ 60.2151 By what date must I conduct the annual air pollution control device inspection?

On an annual basis (no more than 12 months following the previous annual air pollution control device inspection), you must complete the air pollution control device inspection as described in § 60.2141.

[76 FR 15456, Mar. 21, 2011]

§ 60.2155 May I conduct performance testing less often?

(a) You must conduct annual performance tests according to the schedule specified in § 60.2150, with the following exceptions:

(1) You may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward, as specified in § 60.2160. The Administrator may request a repeat performance test at any time.

(2) You must repeat the performance test within 60 days of a process change, as defined in § 60.2265.

(3) If the initial or any subsequent performance test for any pollutant in table 1 or tables 5 through 8 of this subpart, as applicable, demonstrates that the emission level for the pollutant is no greater than the emission level specified in paragraph (a)(3)(i) or (a)(3)(ii) of this section, as applicable, and you are not required to conduct a performance test for the pollutant in response to a request by the Administrator in paragraph (a)(1) of this section or a process change in paragraph (a)(2) of this section, you may elect to skip conducting a performance test for the pollutant for the next 2 years. You must conduct a performance test for the pollutant during the third year and no more than 37 months following the previous performance test for the pollutant. For cadmium and lead, both cadmium and lead must be emitted at emission levels no greater than their respective emission levels specified in paragraph (a)(3)(i) of this section for you to qualify for less frequent testing under this paragraph.

(i) For particulate matter, hydrogen chloride, mercury, nitrogen oxides, sulfur dioxide, cadmium, lead and dioxins/furans, the emission level equal to 75 percent of the applicable emission limit in table 1 or tables 5 through 8 of this subpart, as applicable, to this subpart.

(ii) For fugitive emissions, visible emissions (of combustion ash from the ash conveying system) for 2 percent of the time during each of the three 1-hour observations periods.

(4) If you are conducting less frequent testing for a pollutant as provided in paragraph (a)(3) of this section and a subsequent performance test for the pollutant indicates that your CISWI unit does not meet the emission level specified in paragraph (a)(3)(i) or (a)(3)(ii) of this section, as applicable, you must conduct annual performance tests for the pollutant according to the schedule specified in paragraph (a) of this section until you qualify for less frequent testing for the pollutant as specified in paragraph (a)(3) of this section.

(b) [Reserved]

[76 FR 15456, Mar. 21, 2011]

§ 60.2160 May I conduct a repeat performance test to establish new operating limits?

(a) Yes. You may conduct a repeat performance test at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.

(b) You must repeat the performance test if your feed stream is different than the feed streams used during any performance test used to demonstrate compliance.

MONITORING

§ 60.2165 What monitoring equipment must I install and what parameters must I monitor?

(a) If you are using a wet scrubber to comply with the emission limitation

under §60.2105, you must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in table 2 of this subpart. These devices (or methods) must measure and record the values for these operating parameters at the frequencies indicated in table 2 of this subpart at all times except as specified in §60.2170(a).

(b) If you use a fabric filter to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (b)(1) through (8) of this section.

(1) You must install and operate a bag leak detection system for each exhaust stack of the fabric filter.

(2) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(6) The bag leak detection system must be equipped with an alarm system that will alert automatically an operator when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is observed easily by plant operating personnel.

(7) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) If you are using something other than a wet scrubber, activated carbon, selective non-catalytic reduction, or an electrostatic precipitator to comply with the emission limitations under §60.2105, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in §60.2115.

(d) If you use activated carbon injection to comply with the emission limitations in this subpart, you must measure the minimum mercury sorbent flow rate once per hour.

(e) If you use selective noncatalytic reduction to comply with the emission limitations, you must complete the following:

(1) Following the date on which the initial performance test is completed or is required to be completed under §60.2125, whichever date comes first, ensure that the affected facility does not operate above the maximum charge rate, or below the minimum secondary chamber temperature (if applicable to your CISWI unit) or the minimum reagent flow rate measured as 3-hour block averages at all times.

(2) Operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature and below the minimum reagent flow rate simultaneously constitute a violation of the nitrogen oxides emissions limit.

(f) If you use an electrostatic precipitator to comply with the emission limits of this subpart, you must monitor the secondary power to the electrostatic precipitator collection plates and maintain the 3-hour block averages at or above the operating limits established during the mercury or particulate matter performance test.

(g) For waste-burning kilns not equipped with a wet scrubber, in place of hydrogen chloride testing with EPA Method 321 at 40 CFR part 63, appendix A, an owner or operator must install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring hydrogen chloride emissions discharged to the atmosphere and record the output of the system. To

demonstrate continuous compliance with the hydrogen chloride emissions limit for units other than waste-burning kilns not equipped with a wet scrubber, a facility may substitute use of a hydrogen chloride continuous emission monitoring system for conducting the hydrogen chloride annual performance test, monitoring the minimum hydrogen chloride sorbent flow rate, and monitoring the minimum scrubber liquor pH.

(h) To demonstrate continuous compliance with the particulate matter emissions limit, a facility may substitute use of a particulate matter continuous emission monitoring system for conducting the particulate matter annual performance test and monitoring the minimum pressure drop across the wet scrubber, if applicable.

(i) To demonstrate continuous compliance with the dioxin/furan emissions limit, a facility may substitute use of a continuous automated sampling system for the dioxin/furan annual performance test. You must record the output of the system and analyze the sample according to EPA Method 23 at 40 CFR part 60, appendix A–7 of this part. You may propose alternative continuous monitoring consistent with the requirements in § 60.13(i). The owner or operator who elects to continuously sample dioxin/furan emissions instead of sampling and testing using EPA Method 23 at 40 CFR part 60, appendix A–7 must install, calibrate, maintain, and operate a continuous automated sampling system and must comply with the requirements specified in § 60.58b(p) and (q).

(j) To demonstrate continuous compliance with the mercury emissions limit, a facility may substitute use of a continuous automated sampling system for the mercury annual performance test. You must record the output of the system and analyze the sample at set intervals using any suitable determinative technique that can meet performance specification 12B. The owner or operator who elects to continuously sample mercury emissions instead of sampling and testing using EPA Reference Method 29 or 30B at 40 CFR part 60, appendix A–8 of this part, ASTM D6784–02 (Reapproved 2008) (incorporated by reference, see § 60.17), or an approved alternative method for measuring mercury emissions, must install, calibrate, maintain, and operate a continuous automated sampling system and must comply with performance specification 12A and quality assurance procedure 5, as well as the requirements specified in § 60.58b(p) and (q).

(k) To demonstrate continuous compliance with the nitrogen oxides emissions limit, a facility may substitute use of a continuous emission monitoring system for the nitrogen oxides annual performance test to demonstrate compliance with the nitrogen oxides emissions limits.

(1) Install, calibrate, maintain, and operate a continuous emission monitoring system for measuring nitrogen oxides emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 2 of appendix B of this part, the quality assurance procedure one of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation, and operation of the continuous emission monitoring system.

(2) Following the date that the initial performance test for nitrogen oxides is completed or is required to be completed under § 60.2125, compliance with the emission limit for nitrogen oxides required under § 60.52b(d) must be determined based on the 30-day rolling average of the hourly emission concentrations using continuous emission monitoring system outlet data. The 1-hour arithmetic averages must be expressed in parts per million by volume (dry basis) and used to calculate the 30-day rolling average concentrations. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(l) To demonstrate continuous compliance with the sulfur dioxide emissions limit, a facility may substitute use of a continuous automated sampling system for the sulfur dioxide annual performance test to demonstrate compliance with the sulfur dioxide emissions limits.

(1) Install, calibrate, maintain, and operate a continuous emission monitoring system for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 2 of appendix B of this part, the quality assurance requirements of procedure one of appendix F of this part and procedures under §60.13 must be followed for installation, evaluation, and operation of the continuous emission monitoring system.

(2) Following the date that the initial performance test for sulfur dioxide is completed or is required to be completed under §60.2125, compliance with the sulfur dioxide emission limit may be determined based on the 30-day rolling average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data. The 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average emission concentrations and daily geometric average emission percent reductions. The 1-hour arithmetic averages must be calculated using the data points required under §60.13(e)(2).

(m) For energy recovery units over 10 MMBtu/hr design heat input that do not use a wet scrubber, fabric filter with bag leak detection system, or particulate matter continuous emission monitoring system, you must install, operate, certify, and maintain a continuous opacity monitoring system according to the procedures in paragraphs (m)(1) through (5) of this section by the compliance date specified in §60.2105. Energy recovery units that use a particulate matter continuous emission monitoring system to demonstrate initial and continuing compliance according to the procedures in §60.2165(n) are not required to install a continuous opacity monitoring system and must perform the annual performance tests for the opacity consistent with §60.2145(f).

(1) Install, operate, and maintain each continuous opacity monitoring system according to performance specification 1 of 40 CFR part 60, appendix B.

(2) Conduct a performance evaluation of each continuous opacity monitoring system according to the requirements in §60.13 and according to PS–1 of 40 CFR part 60, appendix B.

(3) As specified in §60.13(e)(1), each continuous opacity monitoring system must 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.

(4) Reduce the continuous opacity monitoring system data as specified in §60.13(h)(1).

(5) Determine and record all the 6-minute averages (and 1-hour block averages as applicable) collected.

(n) For energy recovery units with design capacities greater than 250 MMBtu/hr, in place of particulate matter testing with EPA Method 5 at 40 CFR part 60, appendix A–3, an owner or operator must install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring particulate matter emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who continuously monitors particulate matter emissions instead of conducting performance testing using EPA Method 5 at 40 CFR part 60, appendix A–3 must install, calibrate, maintain, and operate a continuous emission monitoring system and must comply with the requirements specified in paragraphs (n)(1) through (n)(14) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor must be installed, evaluated, and operated in accordance with the requirements of performance specification 11 of appendix B of this part and quality assurance requirements of procedure two of appendix F of this part and §60.13. Use Method 5 or Method 5I of Appendix A of this part for the PM CEMS correlation testing.

(4) The initial performance evaluation must be completed no later than 180 days after the date of initial start-up of the affected facility, as specified under §60.2125 or within 180 days of notification to the Administrator of use of the continuous monitoring system if

the owner or operator was previously determining compliance by Method 5 performance tests, whichever is later.

(5) The owner or operator of an affected facility may request that compliance with the particulate matter emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established according to the procedures and methods specified in § 60.2145(s)(5)(i) through (s)(5)(iv).

(6) The owner or operator of an affected facility must conduct an initial performance test for particulate matter emissions as required under § 60.2125. Compliance with the particulate matter emission limit must be determined by using the continuous emission monitoring system specified in paragraph (n) of this section to measure particulate matter and calculating a 30-day rolling average emission concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7.

(7) Compliance with the particulate matter emission limit must be determined based on the 30-day rolling average calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 from the 1-hour arithmetic average continuous emission monitoring system outlet data.

(8) At a minimum, valid continuous monitoring system hourly averages must be obtained as specified in § 60.2170(e).

(9) The 1-hour arithmetic averages required under paragraph (n)(7) of this section must be expressed in milligrams per dry standard cubic meter corrected to 7 percent oxygen (dry basis) and must be used to calculate the 30-day rolling average emission concentrations. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(10) All valid continuous emission monitoring system data must be used in calculating average emission concentrations even if the minimum continuous emission monitoring system data requirements of paragraph (n)(8) of this section are not met.

(11) The continuous emission monitoring system must be operated according to performance specification 11 in appendix B of this part.

(12) During each relative accuracy test run of the continuous emission monitoring system required by performance specification 11 in appendix B of this part, particulate matter and oxygen (or carbon dioxide) data must be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the following test methods.

(i) For particulate matter, EPA Reference Method 5 must be used.

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B, as applicable, must be used.

(13) Quarterly accuracy determinations and daily calibration drift tests must be performed in accordance with procedure 2 in appendix F of this part.

(14) When particulate matter emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data must be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 at 40 CFR part 60, appendix A–7 to provide, as necessary, valid emissions data for a minimum of 85 percent of the hours per day, 90 percent of the hours per calendar quarter, and 95 percent of the hours per calendar year that the affected facility is operated and combusting waste.

(o) To demonstrate continuous compliance with the carbon monoxide emissions limit, you must use a continuous automated sampling system.

(1) Install, calibrate, maintain, and operate a continuous emission monitoring system for measuring carbon monoxide emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 4B of appendix B of this part, the quality assurance procedure 1 of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation, and operation of the continuous emission monitoring system.

(2) Following the date that the initial performance test for carbon monoxide is completed or is required to be completed under §60.2140, compliance with the carbon monoxide emission limit must be determined based on the 30-day rolling average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data. The 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average emission concentrations. The 1-hour arithmetic averages must be calculated using the data points required under §60.13(e)(2).

(p) The owner/operator of an affected source with a bypass stack shall install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time and duration.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15457, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9184, Feb. 7, 2013, §60.2165 was amended by revising paragraph (c); revising paragraphs (g) through (k); revising paragraphs (l)(1) and (2); revising paragraph (m) introductory text; revising paragraph (n) introductory text; removing paragraph (n)(14); revising paragraphs (n)(6), (n)(7), (n)(9) through (n)(11), (n)(12) introductory text, and (n)(12)(ii); revising paragraphs (o)(1) and (2); adding paragraphs (q), (r), and (s), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§60.2165 What monitoring equipment must I install and what parameters must I monitor?

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(c) If you are using something other than a wet scrubber, activated carbon, selective non-catalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations under §60.2105, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in §60.2115.

* * * * *

(g) For waste-burning kilns not equipped with a wet scrubber or dry scrubber, in place of hydrogen chloride testing with EPA Method 321 at 40 CFR part 63, appendix A, an owner or operator must install, calibrate, maintain, and operate a CEMS for monitoring hydrogen chloride emissions discharged to the atmosphere and record the output of the system. To demonstrate continuous compliance with the hydrogen chloride emissions limit for units other than waste-burning kilns not equipped with a wet scrubber or dry scrubber, a facility may substitute use of a hydrogen chloride CEMS for conducting the hydrogen chloride annual performance test, monitoring the minimum hydrogen chloride sorbent flow rate, monitoring the minimum scrubber liquor pH, and monitoring minimum injection rate.

(h) To demonstrate continuous compliance with the particulate matter emissions limit, a facility may substitute use of a particulate matter CEMS for conducting the PM annual performance test and using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure).

(i) To demonstrate continuous compliance with the dioxin/furan emissions limit, a facility may substitute use of a continuous automated sampling system for the dioxin/furan annual performance test. You must record the output of the system and analyze the sample according to EPA Method 23 at 40 CFR part 60, appendix A–7 of this part. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to dioxin/furan from continuous monitors is published in the FEDERAL REGISTER. The owner or operator who elects to continuously sample dioxin/furan emissions instead of sampling and testing using EPA Method 23 at 40 CFR part 60, appendix A–7 must install, calibrate, maintain, and operate a continuous automated sampling system and must comply with the requirements specified in §60.58b(p) and (q). A facility may substitute continuous dioxin/furan monitoring for the minimum sorbent flow rate, if activated carbon sorbent injection is used solely for compliance with the dioxin/furan emission limit.

(j) To demonstrate continuous compliance with the mercury emissions limit, a facility may substitute use of a continuous automated sampling system for the mercury annual performance test. You must record the output of the system and analyze the sample at set intervals using any suitable determinative technique that can meet performance specification 12B. The owner or operator who elects to continuously sample mercury emissions instead of sampling and testing using EPA Reference Method 29 or 30B at 40 CFR part 60, appendix A–8 of this part, ASTM D6784–02 (Reapproved 2008) (incorporated by reference, see §60.17), or an approved alternative method for measuring mercury emissions, must install, calibrate,

maintain, and operate a continuous automated sampling system and must comply with performance specification 12A and quality assurance procedure 5, as well as the requirements specified in § 60.58b(p) and (q). A facility may substitute continuous mercury monitoring for the minimum sorbent flow rate, if activated carbon sorbent injection is used solely for compliance with the mercury emission limit.

(k) To demonstrate continuous compliance with the nitrogen oxides emissions limit, a facility may substitute use of a CEMS for the nitrogen oxides annual performance test to demonstrate compliance with the nitrogen oxides emissions limits and monitoring the charge rate, secondary chamber temperature, and reagent flow for selective noncatalytic reduction, if applicable.

(1) Install, calibrate, maintain, and operate a CEMS for measuring nitrogen oxides emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 2 of appendix B of this part, the quality assurance procedure one of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation, and operation of the CEMS.

(2) Following the date that the initial performance test for nitrogen oxides is completed or is required to be completed under § 60.2125, compliance with the emission limit for nitrogen oxides required under § 60.52b(d) must be determined based on the 30-day rolling average of the hourly emission concentrations using CEMS outlet data. The 1-hour arithmetic averages must be expressed in parts per million by volume corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average concentrations. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(l) * * *

(1) Install, calibrate, maintain, and operate a CEMS for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 2 of appendix B of this part, the quality assurance requirements of procedure one of appendix F of this part and procedures under § 60.13 must be followed for installation, evaluation, and operation of the CEMS.

(2) Following the date that the initial performance test for sulfur dioxide is completed or is required to be completed under § 60.2125, compliance with the sulfur dioxide emission limit may be determined based on the 30-day rolling average of the hourly arithmetic average emission concentrations using CEMS outlet data. The 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average emission concentrations. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(m) For energy recovery units over 10 MMBtu/hr but less than 250 MMBtu/hr annual average heat input rates that do not use a wet scrubber, fabric filter with bag leak detection system, or particulate matter CEMS, you must install, operate, certify, and maintain a continuous opacity monitoring system according to the procedures in paragraphs (m)(1) through (5) of this section by the compliance date specified in § 60.2105. Energy recovery units that use a CEMS to demonstrate initial and continuing compliance according to the procedures in § 60.2165(n) are not required to install a continuous opacity monitoring system and must perform the annual performance tests for the opacity consistent with § 60.2145(f).

* * * * *

(n) For coal and liquid/gas energy recovery units, incinerators, and small remote incinerators, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring particulate matter emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who continuously monitors particulate matter emissions instead of conducting performance testing using EPA Method 5 at 40 CFR part 60, appendix A–3 or, as applicable, monitor with a particulate matter CPMS according to paragraph (r) of this section, must install, calibrate, maintain, and operate a CEMS and must comply with the requirements specified in paragraphs (n)(1) through (13) of this section.

* * * * *

(6) The owner or operator of an affected facility must conduct an initial performance test for particulate matter emissions as required under § 60.2125. Compliance with the particulate matter emission limit, if PM CEMS are elected for demonstrating compliance, must be determined by using the CEMS specified in this paragraph (n) to measure particulate matter. You must calculate a 30-day rolling average of 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown, as defined in this subpart, using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7.

(7) Compliance with the particulate matter emission limit must be determined based on

the 30-day rolling average calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 from the 1-hour arithmetic average CEMS outlet data.

* * * * *

(9) The 1-hour arithmetic averages required under paragraph (n)(7) of this section must be expressed in milligrams per dry standard cubic meter corrected to 7 percent oxygen (dry basis) and must be used to calculate the 30-day rolling average emission concentrations. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(10) All valid CEMS data must be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (n)(8) of this section are not met.

(11) The CEMS must be operated according to performance specification 11 in appendix B of this part.

(12) During each relative accuracy test run of the CEMS required by performance specification 11 in appendix B of this part, particulate matter and oxygen (or carbon dioxide) data must be collected concurrently (or within a 30- to 60-minute period) by both the CEMS and the following test methods.

* * * * *

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B, as applicable, must be used.

* * * * *

(o) * * *

(1) Install, calibrate, maintain, and operate a CEMS for measuring carbon monoxide emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 4B of appendix B of this part, the quality assurance procedure 1 of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation, and operation of the CEMS.

(2) Following the date that the initial performance test for carbon monoxide is completed or is required to be completed under § 60.2140, compliance with the carbon monoxide emission limit may be determined based on the 30-day rolling average of the hourly arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, using CEMS outlet data. Except for CEMS data during startup and shutdown, as defined in this subpart, the 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average emission concentrations. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

* * * * *

(q) For energy recovery units with a design heat input capacity of 100 MMBtu per hour or greater that do not use a carbon monoxide CEMS, you must install, operate, and maintain a oxygen analyzer system as defined in § 60.2265 according to the procedures in paragraphs (q)(1) through (4) of this section.

(1) The oxygen analyzer system must be installed by the initial performance test date specified in § 60.2675.

(2) You must operate the oxygen trim system within compliance with paragraph (q)(3) of this section at all times.

(3) You must maintain the oxygen level such that the 30-day rolling average that is established as the operating limit for oxygen according to paragraph (q)(4) or this section is not below the lowest hourly average oxygen concentration measured during the most recent CO performance test.

(4) You must calculate and record a 30-day rolling average oxygen concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 of Appendix A–7 of this part.

(r) For energy recovery units with annual average heat input rates greater than or equal to 250 MMBtu/hour and waste-burning kilns, you must install, calibrate, maintain, and operate a PM CPMS and record the output of the system as specified in paragraphs (r)(1) through (8) of this section. If you elect to use a particulate matter CEMS as specified in paragraph (n) of this section, you are not required to use a PM CPMS to monitor particulate matter emissions. For other energy recovery units, you may elect to use PM CPMS operated in accordance with this section. PM CPMS are suitable in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure).

(1) Install, calibrate, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 60.2145(l) and (r)(1)(i) through (iii) of this section.

(i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation detection of PM in the exhaust gas or representative sample. The reportable measurement output

from the PM CPMS must be expressed as milliamps.

(ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.

(iii) The PM CPMS must be capable of detecting and responding to particulate matter concentrations of no greater than 0.5 mg/actual cubic meter.

(2) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, you must adjust the site-specific operating limit in accordance with the results of the performance test according to the procedures specified in § 60.2110.

(3) Collect PM CPMS hourly average output data for all energy recovery unit or waste-burning kiln operating hours. Express the PM CPMS output as milliamps.

(4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output collected during all energy recovery unit or waste-burning kiln operating hours data (milliamps).

(5) You must collect data using the PM CPMS at all times the energy recovery unit or waste-burning kiln is operating and at the intervals specified in paragraph (r)(1)(ii) of this section, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), and any scheduled maintenance as defined in your site-specific monitoring plan.

(6) You must use all the data collected during all energy recovery unit or waste-burning kiln operating hours in assessing the compliance with your operating limit except:

(i) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or quality control activities conducted during monitoring system malfunctions are not used in calculations (report any such periods in your annual deviation report);

(ii) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or quality control activities conducted during out-of-control periods are not used in calculations (report emissions or operating levels and report any such periods in your annual deviation report);

(iii) Any PM CPMS data recorded during periods of CEMS data during startup and shutdown, as defined in this subpart.

(7) You must record and make available upon request results of PM CPMS system performance audits, as well as the dates and duration of periods from when the PM CPMS is out of control until completion of the corrective actions necessary to return the PM CPMS to operation consistent with your site-specific monitoring plan.

(8) For any deviation of the 30-day rolling average PM CPMS average value from the established operating parameter limit, you must:

(i) Within 48 hours of the deviation, visually inspect the air pollution control device;

(ii) If inspection of the air pollution control device identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(iii) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify. Within 45 days of the deviation, you must re-establish the CPMS operating limit. You are not required to conduct additional testing for any deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.

(iv) PM CPMS deviations leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a violation of this subpart.

(s) If you use a dry scrubber to comply with the emission limits of this subpart, you must monitor the injection rate of each sorbent and maintain the 3-hour block averages at or above the operating limits established during the hydrogen chloride performance test.

§ 60.2170 Is there a minimum amount of monitoring data I must obtain?

For each continuous monitoring system required or optionally allowed under § 60.2165, you must collect data according to this section:

(a) You must operate the monitoring system and collect data at all required intervals at all times compliance is required except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods (as specified in 60.2210(o) of this part), and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments). A

monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to effect monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.

(b) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(c) Except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments, failure to collect required data is a deviation of the monitoring requirements.

[76 FR 15459, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9187, Feb. 7, 2013, §60.2170 was amended by revising paragraph (b), effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§60.2170 Is there a minimum amount of monitoring data I must obtain?

* * * * *

(b) You may not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

* * * * *

RECORDKEEPING AND REPORTING

§60.2175 What records must I keep?

You must maintain the items (as applicable) as specified in paragraphs (a), (b), and (e) through (u) of this section for a period of at least 5 years:

(a) Calendar date of each record.

(b) Records of the data described in paragraphs (b)(1) through (6) of this section:

(1) The CISWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet every 15 minutes of operation, as applicable.

(3) Pressure drop across the wet scrubber system every 15 minutes of operation or amperage to the wet scrubber every 15 minutes of operation, as applicable.

(4) Liquor pH as introduced to the wet scrubber every 15 minutes of operation, as applicable.

(5) For affected CISWI units that establish operating limits for controls other than wet scrubbers under §60.2110(d) through (f) or §60.2115, you must maintain data collected for all operating parameters used to determine compliance with the operating limits.

(6) If a fabric filter is used to comply with the emission limitations, you must record the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in §60.2110(c).

(c)—(d) [Reserved]

(e) Identification of calendar dates and times for which data show a deviation from the operating limits in table 2 of this subpart or a deviation from other operating limits established under §60.2110(d) through (f) or §60.2115 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

(f) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations.

(g) All documentation produced as a result of the siting requirements of §§ 60.2045 and 60.2050.

(h) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2095(a) as required by § 60.2095(b), including the date of the initial review and all subsequent annual reviews.

(i) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2070, met the criteria for qualification under § 60.2080, and maintained or renewed their qualification under § 60.2085 or § 60.2090. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(j) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

(k) Records of calibration of any monitoring devices as required under § 60.2165.

(l) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

(m) The information listed in § 60.2095(a).

(n) On a daily basis, keep a log of the quantity of waste burned and the types of waste burned (always required).

(o) Maintain records of the annual air pollution control device inspections that are required for each CISWI unit subject to the emissions limits in table 1 of this subpart or tables 5 through 8 of this subpart, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the state regulatory agency.

(p) For continuously monitored pollutants or parameters, you must document and keep a record of the following parameters measured using continuous monitoring systems.

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions.

(3) All 1-hour average concentrations of nitrogen oxides emissions.

(4) All 1-hour average concentrations of carbon monoxide emissions.

(5) All 1-hour average concentrations of particulate matter emissions.

(6) All 1-hour average concentrations of mercury emissions.

(7) All 1-hour average concentrations of hydrogen chloride emissions.

(q) Records indicating use of the bypass stack, including dates, times, and durations.

(r) If you choose to stack test less frequently than annually, consistent with § 60.2155(a) through (c), you must keep annual records that document that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.

(s) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.

(t) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(u) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(v) For operating units that burn materials other than traditional fuels as defined in § 241.2, a description of each material burned, and a record which documents how each material that is not a traditional fuel meets each of the legitimacy criteria in § 241.3(d). If you combust a material that has been processed from a discarded non-hazardous secondary material pursuant to § 241.3(b)(4), you must keep records as

to how the operations that produced the material satisfy the definition of processing in §241.2. If the material received a non-waste determination pursuant to the petition process submitted under §241.3(c), you must keep a copy of the non-waste determination granted by EPA.

(w) For operating units that burn tires,

(1) A certification that the shipment of tires that are non-waste per 40 CFR 241.3(b)(2)(i), are part of an established tire collection program, consistent with the definition of that term in §241.2. The certification must document that the tires were not discarded and are handled as valuable commodities in accordance with §241.3(d), from the point of removal from the automobile through arrival at the combustion facility. The certification must identify the entity the tires were received from (for example, the name of the state or private collection program), the quantity, volume, or weight of tires received by you, and the dates received. The certification must be signed by the owner or operator of the combustion unit, or by a responsible official of the established tire collection program, and must include the following certification of compliance, ''The tires from this tire collection program meet the EPA definition of an established tire collection program in 40 CFR section 241.'' and state the title or position of the person signing the certification.

(2) You must also keep a record that identifies where on your plant site the tires from each tire collection program are located, and that accounts for all tires at the plant site.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15459, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9187, Feb. 7, 2013, §60.2175 was amended by revising the introductory text; revising paragraph (b)(5); revising paragraph (e); revising paragraph (p)(4); adding paragraphs (p)(8) and (p)(9); revising paragraphs (v) and (w); adding paragraph (x), effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

§60.2175 What records must I keep?

You must maintain the items (as applicable) as specified in paragraphs (a), (b), and (e) through (x) of this section for a period of at least 5 years:

* * * * *

(b) * * *

(5) For affected CISWI units that establish operating limits for controls other than wet scrubbers under §60.2110(d) through (g) or §60.2115, you must maintain data collected for all operating parameters used to determine compliance with the operating limits. For energy recovery units using activated carbon injection or a dry scrubber, you must also maintain records of the load fraction and corresponding sorbent injection rate records.

* * * * *

(e) Identification of calendar dates and times for which data show a deviation from the operating limits in table 2 of this subpart or a deviation from other operating limits established under §60.2110(d) through (g) or §60.2115 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

* * * * *

(p) * * *

(4) All 1-hour average concentrations of carbon monoxide emissions. You must indicate which data are CEMS data during start-up and shutdown.

* * * * *

(8) All 1-hour average percent oxygen concentrations.

(9) All 1-hour average PM CPMS readings or particulate matter CEMS outputs.

* * * * *

(v) For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to §241.3(b)(1) of this chapter, you must keep a record which documents how the secondary material meets each of the legitimacy criteria under §241.3(d)(1). If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to §241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfies the definition of processing in §241.2 and each of the legitimacy criteria of §241.3(d)(1) of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under §241.3(c) of this chapter, you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as

fuel per § 241.4, you must keep records documenting that the material is a listed nonwaste under § 241.4(a).

(w) Records of the criteria used to establish that the unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)) and that the waste material the unit is proposed to burn is homogeneous.

(x) Records of the criteria used to establish that the unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)) and that the waste material the unit is proposed to burn is homogeneous.

§ 60.2180 Where and in what format must I keep my records?

All records must be available onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§ 60.2185 What reports must I submit?

See table 4 of this subpart for a summary of the reporting requirements.

§ 60.2190 What must I submit prior to commencing construction?

You must submit a notification prior to commencing construction that includes the five items listed in paragraphs (a) through (e) of this section.

(a) A statement of intent to construct.

(b) The anticipated date of commencement of construction.

(c) All documentation produced as a result of the siting requirements of § 60.2050.

(d) The waste management plan as specified in §§ 60.2055 through 60.2065.

(e) Anticipated date of initial startup.

§ 60.2195 What information must I submit prior to initial startup?

You must submit the information specified in paragraphs (a) through (e) of this section prior to initial startup.

(a) The type(s) of waste to be burned.

(b) The maximum design waste burning capacity.

(c) The anticipated maximum charge rate.

(d) If applicable, the petition for site-specific operating limits under § 60.2115.

(e) The anticipated date of initial startup.

§ 60.2200 What information must I submit following my initial performance test?

You must submit the information specified in paragraphs (a) through (c) of this section no later than 60 days following the initial performance test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial performance test results obtained under § 60.2135, as applicable.

(b) The values for the site-specific operating limits established in § 60.2110 or § 60.2115.

(c) If you are using a fabric filter to comply with the emission limitations, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required by § 60.2165(b).

§ 60.2205 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in § 60.2200. You must submit subsequent reports no more than 12 months following the previous report. (If the unit is subject to permitting requirements under title V of the Clean Air Act, you may be required by the permit to submit these reports more frequently.)

§ 60.2210 What information must I include in my annual report?

The annual report required under § 60.2205 must include the ten items listed in paragraphs (a) through (j) of this section. If you have a deviation from the operating limits or the emission limitations, you must also submit deviation reports as specified in §§ 60.2215, 60.2220, and 60.2225.

(a) Company name and address.

(b) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(c) Date of report and beginning and ending dates of the reporting period.

(d) The values for the operating limits established pursuant to § 60.2110 or § 60.2115.

(e) If no deviation from any emission limitation or operating limit that applies to you has been reported, a statement that there was no deviation from

the emission limitations or operating limits during the reporting period.

(f) The highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported.

(g) Information recorded under §60.2175(b)(6) and (c) through (e) for the calendar year being reported.

(h) If a performance test was conducted during the reporting period, the results of that test.

(i) If you met the requirements of §60.2155(a) or (b), and did not conduct a performance test during the reporting period, you must state that you met the requirements of §60.2155(a) or (b), and, therefore, you were not required to conduct a performance test during the reporting period.

(j) Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours, but less than 2 weeks.

(k) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction that occurred during the reporting period and that caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §60.11(d), including actions taken to correct a malfunction.

(l) For each deviation from an emission or operating limitation that occurs for a CISWI unit for which you are not using a continuous monitoring system to comply with the emission or operating limitations in this subpart, the annual report must contain the following information.

(1) The total operating time of the CISWI unit at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(m) If there were periods during which the continuous monitoring system, including the continuous emission monitoring system, was out of control as specified in paragraph (o) of this section, the annual report must contain the following information for each deviation from an emission or operating limitation occurring for a CISWI unit for which you are using a continuous monitoring system to comply with the emission and operating limitations in this subpart.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each continuous monitoring system was out-of-control, including start and end dates and hours and descriptions of corrective actions taken.

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of continuous monitoring system downtime during the reporting period, and the total duration of continuous monitoring system downtime as a percent of the total operating time of the CISWI unit at which the continuous monitoring system downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant that was monitored at the CISWI unit.

(9) A brief description of the CISWI unit.

(10) A brief description of the continuous monitoring system.

(11) The date of the latest continuous monitoring system certification or audit.

(12) A description of any changes in continuous monitoring system, processes, or controls since the last reporting period.

(n) If there were periods during which the continuous monitoring system, including the continuous emission monitoring system, was not out of control as specified in paragraph (o) of this section, a statement that there were not periods during which the continuous monitoring system was out of control during the reporting period.

(o) A continuous monitoring system is out of control in accordance with the procedure in 40 CFR part 60, appendix F of this part, as if any of the following occur.

(1) The zero (low-level), mid-level (if applicable), or high-level calibration drift exceeds two times the applicable calibration drift specification in the applicable performance specification or in the relevant standard.

(2) The continuous monitoring system fails a performance test audit (*e.g.*, cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit.

(3) The continuous opacity monitoring system calibration drift exceeds two times the limit in the applicable performance specification in the relevant standard.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15460, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9187, Feb. 7, 2013, § 60.2210 was amended by revising paragraph (m) introductory text and paragraph (n), effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2210 What information must I include in my annual report?

* * * * *

(m) If there were periods during which the continuous monitoring system, including the CEMS, was out of control as specified in paragraph (o) of this section, the annual report must contain the following information for each deviation from an emission or operating limitation occurring for a CISWI unit for which you are using a continuous monitoring system to comply with the emission and operating limitations in this subpart.

* * * * *

(n) If there were periods during which the continuous monitoring system, including the CEMS, was not out of control as specified in paragraph (o) of this section, a statement that there were not periods during which the continuous monitoring system was out of control during the reporting period.

* * * * *

§ 60.2215 What else must I report if I have a deviation from the operating limits or the emission limitations?

(a) You must submit a deviation report if any recorded 3-hour average parameter level is above the maximum operating limit or below the minimum operating limit established under this subpart, if the bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period, or if a performance test was conducted that deviated from any emission limitation.

(b) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

§ 60.2220 What must I include in the deviation report?

In each report required under § 60.2215, for any pollutant or parameter that deviated from the emission limitations or operating limits specified in this subpart, include the six items described in paragraphs (a) through (f) of this section.

(a) The calendar dates and times your unit deviated from the emission limitations or operating limit requirements.

(b) The averaged and recorded data for those dates.

(c) Durations and causes of the following:

(1) Each deviation from emission limitations or operating limits and your corrective actions.

(2) Bypass events and your corrective actions.

(d) A copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15461, Mar. 21, 2011]

§ 60.2225 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?

(a) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (a)(1) and (2) of this section.

(1) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (a)(1)(i) through (iii) of this section.

(i) A statement of what caused the deviation.

(ii) A description of what you are doing to ensure that a qualified operator is accessible.

(iii) The date when you anticipate that a qualified operator will be available.

(2) Submit a status report to the Administrator every 4 weeks that includes the three items in paragraphs (a)(2)(i) through (iii) of this section.

(i) A description of what you are doing to ensure that a qualified operator is accessible.

(ii) The date when you anticipate that a qualified operator will be accessible.

(iii) Request approval from the Administrator to continue operation of the CISWI unit.

(b) If your unit was shut down by the Administrator, under the provisions of § 60.2100(b)(2), due to a failure to provide an accessible qualified operator, you must notify the Administrator that you are resuming operation once a qualified operator is accessible.

§ 60.2230 Are there any other notifications or reports that I must submit?

(a) Yes. You must submit notifications as provided by § 60.7.

(b) If you cease combusting solid waste but continue to operate, you must provide 30 days prior notice of the effective date of the waste-to-fuel switch, consistent with 60.2145(a). The notification must identify:

(1) The name of the owner or operator of the CISWI unit, the location of the source, the emissions unit(s) that will cease burning solid waste, and the date of the notice;

(2) The currently applicable subcategory under this subpart, and any 40 CFR part 63 subpart and subcategory that will be applicable after you cease combusting solid waste;

(3) The fuel(s), non-waste material(s) and solid waste(s) the CISWI unit is currently combusting and has combusted over the past 6 months, and the fuel(s) or non-waste materials the unit will commence combusting;

(4) The date on which you became subject to the currently applicable emission limits;

(5) The date upon which you will cease combusting solid waste, and the date (if different) that you intend for any new requirements to become applicable (*i.e.*, the effective date of the waste-to-fuel switch), consistent with paragraphs (b)(2) and (3)of this section.

[76 FR 15461, Mar. 21, 2011]

§ 60.2235 In what form can I submit my reports?

(a) Submit initial, annual and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

(b) As of January 1, 2012, and within 60 days after the date of completing each performance test, as defined in § 63.2, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.*, reference method) data and performance test (*i.e.*, compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (*see http://www.epa.gov/ttn/chief/ert/ert tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

[76 FR 15461, Mar. 21, 2011]

EFFECTIVE DATE NOTE: At 78 FR 9187, Feb. 7, 2013, § 60.2235 was revised, effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

§ 60.2235 In what form can I submit my reports?

(a) Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

(b) Submit results of performance tests and CEMS performance evaluation tests as follows.

(1) Within 60 days after the date of completing each performance test as required by this subpart, you must submit the results of the performance tests required by this subpart to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX)(*www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk, flash drive, or other commonly used electronic storage media to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test in paper submissions to the Administrator.

(2) Within 60 days after the date of completing each CEMS performance evaluation test, as defined in this subpart and required by this subpart, you must submit the relative accuracy test audit (RATA) data electronically into EPA's Central Data Exchange by using CEDRI as mentioned in paragraph (b)(1) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator shall submit the results of the performance evaluation in paper submissions to the Administrator.

§ 60.2240 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

TITLE V OPERATING PERMITS

§ 60.2242 Am I required to apply for and obtain a Title V operating permit for my unit?

Yes. Each CISWI unit and air curtain incinerator subject to standards under this subpart must operate pursuant to a permit issued under Section 129(e) and Title V of the Clean Air Act.

[76 FR 15461, Mar. 21, 2011]

AIR CURTAIN INCINERATORS

§ 60.2245 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2245 through 60.2260).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.2250 What are the emission limitations for air curtain incinerators?

Within 60 days after your air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, you must meet the two limitations specified in paragraphs (a) and (b) of this section.

(a) Maintain opacity to less than or equal to 10 percent opacity (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values), except as described in paragraph (b) of this section.

(b) Maintain opacity to less than or equal to 35 percent opacity (as determined by the average of three 1-hour

blocks consisting of ten 6-minute average opacity values) during the startup period that is within the first 30 minutes of operation.

[76 FR 15761, Mar. 21, 2011]

§ 60.2255 How must I monitor opacity for air curtain incinerators?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

(b) Conduct an initial test for opacity as specified in § 60.8.

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

§ 60.2260 What are the recordkeeping and reporting requirements for air curtain incinerators?

(a) Prior to commencing construction on your air curtain incinerator, submit the three items described in paragraphs (a)(1) through (3) of this section.

(1) Notification of your intent to construct the air curtain incinerators.

(2) Your planned initial startup date.

(3) Types of materials you plan to burn in your air curtain incinerator.

(b) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.

(c) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(d) You must submit the results (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.

(f) Keep a copy of the initial and annual reports onsite for a period of 5 years.

[65 FR 75353, Dec. 1, 2000, as amended at 76 FR 15461, Mar. 21, 2011]

DEFINITIONS

§ 60.2265 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subpart A (General Provisions) of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency.

30-day rolling average means the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes periods when this unit is not operating. The 720 hours should be consecutive, but not necessarily continuous if operations are intermittent.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

Annual heat input means the heat input for the 12 months preceding the compliance demonstration.

Auxiliary fuel means natural gas, liquified petroleum gas, fuel oil, or diesel fuel.

Average annual heat input rate means annual heat input divided by the hours of operation for the 12 months preceding the compliance demonstration.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is

not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Burn-off oven means any rack reclamation unit, part reclamation unit, or drum reclamation unit. A burn-off oven is not an incinerator, waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

CEMS data during startup and shutdown means the following:

(1) For incinerators, small remote incinerators, and energy recovery units: CEMS data collected during the first hours of a CISWI unit startup from a cold start until waste is fed to the unit and the hours of operation following the cessation of waste material being fed to the CISWI unit during a unit shutdown. For each startup event, the length of time that CEMS data may be claimed as being CEMS data during startup must be 48 operating hours or less. For each shutdown event, the length of time that CEMS data may be claimed as being CEMS data during shutdown must be 24 operating hours or less.

(2) For waste-burning kilns: CEMS data collected during the periods of kiln operation that do not include normal operations. Startup begins when the kiln's induced fan is turned on and continues until continuous feed is introduced into the kiln, at which time the kiln is in normal operating mode. Shutdown begins when feed to the kiln is halted.

Chemical recovery unit means combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. The following seven types of units are considered chemical recovery units:

(1) Units burning only pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.

(2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.

(3) Units burning only wood or coal feedstock for the production of charcoal.

(4) Units burning only manufacturing byproduct streams/residue containing catalyst metals that are reclaimed and reused as catalysts or used to produce commercial grade catalysts.

(5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.

(6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or other gases for use in other manufacturing processes.

(7) Units burning only photographic film to recover silver.

Chemical recovery unit means combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. The following seven types of units are considered chemical recovery units:

(1) Units burning only pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.

(2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.

(3) Units burning only wood or coal feedstock for the production of charcoal.

(4) Units burning only manufacturing byproduct streams/residue containing catalyst metals which are reclaimed and reused as catalysts or used to produce commercial grade catalysts.

(5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.

(6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or

other gases for use in other manufacturing processes.

(7) Units burning only photographic film to recover silver.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Commercial and industrial solid waste incineration (CISWI) unit means any distinct operating unit of any commercial or industrial facility that combusts, or has combusted in the preceding 6 months, any solid waste as that term is defined in 40 CFR part 241. If the operating unit burns materials other than traditional fuels as defined in § 241.2 that have been discarded, and you do not keep and produce records as required by § 60.2175(v), the operating unit is a CISWI unit. While not all CISWI units will include all of the following components, a CISWI unit includes, but is not limited to, the solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the solid waste hopper (if applicable) and extends through two areas: The combustion unit flue gas system, which ends immediately after the last combustion chamber or after the waste heat recovery equipment, if any; and the combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. The CISWI unit includes all ash handling systems connected to the bottom ash handling system.

Contained gaseous material means gases that are in a container when that container is combusted.

Continuous emission monitoring system (CEMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart, used to sample, condition (if applicable), analyze, and provide a record of emissions.

Continuous monitoring system (CMS) means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters. A particulate matter continuous parameter monitoring system (PM CPMS) is a type of CMS.

Cyclonic burn barrel means a combustion device for waste materials that is attached to a 55 gallon, open-head drum. The device consists of a lid, which fits onto and encloses the drum, and a blower that forces combustion air into the drum in a cyclonic manner to enhance the mixing of waste material and air. A cyclonic burn barrel is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements.

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

Dioxins/furans means tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Dioxins/furans means tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Discard means, for purposes of this subpart and 40 CFR part 60, subpart DDDD, only, burned in an incineration unit without energy recovery.

Drum reclamation unit means a unit that burns residues out of drums (e.g., 55 gallon drums) so that the drums can be reused.

Dry scrubber means an add-on air pollution control system that injects dry

alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system.

Energy recovery means the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating.

Energy recovery unit means a combustion unit combusting solid waste (as that term is defined by the Administrator in 40 CFR part 241) for energy recovery. Energy recovery units include units that would be considered boilers and process heaters if they did not combust solid waste.

Energy recovery unit designed to burn biomass (Biomass) means an energy recovery unit that burns solid waste, biomass, and non-coal solid materials but less than 10 percent coal, on a heat input basis on an annual average, either alone or in combination with liquid waste, liquid fuel or gaseous fuels.

Energy recovery unit designed to burn coal (Coal) means an energy recovery unit that burns solid waste and at least 10 percent coal on a heat input basis on an annual average, either alone or in combination with liquid waste, liquid fuel or gaseous fuels.

Energy recovery unit designed to burn liquid waste materials and gas (Liquid/gas) means an energy recovery unit that burns a liquid waste with liquid or gaseous fuels not combined with any solid fuel or waste materials.

Energy recovery unit designed to burn solid materials (Solids) includes energy recovery units designed to burn coal and energy recovery units designed to burn biomass.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse.

Foundry sand thermal reclamation unit means a type of part reclamation unit that removes coatings that are on foundry sand. A foundry sand thermal reclamation unit is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Incinerator means any furnace used in the process of combusting solid waste (as that term is defined by the Administrator in 40 CFR part 241) for the purpose of reducing the volume of the waste by removing combustible matter. Incinerator designs include single chamber and two-chamber.

Kiln means an oven or furnace, including any associated preheater or precalciner devices, used for processing a substance by burning, firing or drying. Kilns include cement kilns that produce clinker by heating limestone and other materials for subsequent production of Portland Cement.

Laboratory analysis unit means units that burn samples of materials for the purpose of chemical or physical analysis. A laboratory analysis unit is not an incinerator, waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Load fraction means the actual heat input of an energy recovery unit divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5).

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable Federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

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.

Minimum voltage or amperage means 90 percent of the lowest test-run average voltage or amperage to the electrostatic precipitator measured during the most recent particulate matter or mercury performance test demonstrating

compliance with the applicable emission limits.

Modification or *modified CISWI unit* means a CISWI unit that has been changed later than August 7, 2013 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Municipal solid waste or municipal-type solid waste means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of solid waste is combusted at any time in the CISWI unit.

Modification or *modified CISWI unit* means a CISWI unit you have changed later than June 1, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Part reclamation unit means a unit that burns coatings off parts (e.g., tools, equipment) so that the parts can be reconditioned and reused.

Particulate matter means total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler or process heater, firebox, or other appropriate location. This definition includes oxygen trim systems and certified oxygen CEMS. The source owner or operator is responsible to install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device. A typical system consists of a flue gas oxygen and/or carbon monoxide monitor that automatically provides a feedback signal to the combustion air controller.

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.

Process change means any of the following physical or operational changes:

(1) A physical change (maintenance activities excluded) to the CISWI unit which may increase the emission rate of any air pollutant to which a standard applies;

(2) An operational change to the CISWI unit where a new type of nonhazardous secondary material is being combusted;

(3) A physical change (maintenance activities excluded) to the air pollution control devices used to comply with the emission limits for the CISWI unit (e.g., replacing an electrostatic precipitator with a fabric filter);

(4) An operational change to the air pollution control devices used to comply with the emission limits for the affected CISWI unit (e.g., change in the sorbent injection rate used for activated carbon injection).

Rack reclamation unit means a unit that burns the coatings off racks used to hold small items for application of a coating. The unit burns the coating overspray off the rack so the rack can be reused.

Raw mill means a ball or tube mill, vertical roller mill or other size reduction equipment, that is not part of an in-line kiln/raw mill, used to grind feed to the appropriate size. Moisture may be added or removed from the feed during the grinding operation. If the raw mill is used to remove moisture from feed materials, it is also, by definition, a raw material dryer. The raw mill also includes the air separator associated with the raw mill.

Reconstruction means rebuilding a CISWI unit and meeting two criteria:

(1) The reconstruction begins on or after June 1, 2001.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

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 facilities:

(i) The designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the Clean Air Act or the regulations

promulgated thereunder are concerned; or

(ii) The designated representative for any other purposes under part 60.

Shutdown means the period of time after all waste has been combusted in the primary chamber.

Small, remote incinerator means an incinerator that combusts solid waste (as that term is defined by the Administrator in 40 CFR part 241) and combusts 3 tons per day or less solid waste and is more than 25 miles driving distance to the nearest municipal solid waste landfill.

Soil treatment unit means a unit that thermally treats petroleum–contaminated soils for the sole purpose of site remediation. A soil treatment unit may be direct-fired or indirect fired. A soil treatment unit is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Solid waste means the term solid waste as defined in 40 CFR 241.2.

Solid waste incineration unit means a distinct operating unit of any facility which combusts any solid waste (as that term is defined by the Administrator in 40 CFR part 241) material from commercial or industrial establishments or the general public (including single and multiple residences, hotels and motels). Such term does not include incinerators or other units required to have a permit under section 3005 of the Solid Waste Disposal Act. The term ''solid waste incineration unit'' does not include:

(1) Materials recovery facilities (including primary or secondary smelters) which combust waste for the primary purpose of recovering metals;

(2) Qualifying small power production facilities, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 769(17)(C)), or qualifying cogeneration facilities, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), which burn homogeneous waste (such as units which burn tires or used oil, but not including refuse-derived fuel) for the production of electric energy or in the case of qualifying cogeneration facilities which burn homogeneous waste for the production of electric energy and steam or forms of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes; or

(3) Air curtain incinerators provided that such incinerators only burn wood wastes, yard wastes, and clean lumber and that such air curtain incinerators comply with opacity limitations to be established by the Administrator by rule.

Space heater means a unit that meets the requirements of 40 CFR 279.23. A space heater is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the unit.

Waste-burning kiln means a kiln that is heated, in whole or in part, by combusting solid waste (as that term is defined by the Administrator in 40 CFR part 241). Secondary materials used in Portland cement kilns shall not be deemed to be combusted unless they are introduced into the flame zone in the hot end of the kiln or mixed with the precalciner fuel.

Wet scrubber means an add-on air pollution control device that uses an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include:

(1) Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

(2) Construction, renovation, or demolition wastes.

(3) Clean lumber.

[65 FR 75350, Dec. 1, 2000, as amended at 70 FR 55580, Sept. 22, 2005; 76 FR 15461, Mar. 21, 2011; 78 FR 9188, Feb. 7, 2013]

TABLE 1 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.004 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part).
Carbon monoxide	157 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10, 10A, or 10B of appendix A of this part).
Dioxins/furans (toxic equivalency basis).	0.41 nanograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 23 of appendix A of this part).
Hydrogen chloride	62 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 26A of appendix A of this part).
Lead	0.04 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part).
Mercury	0.47 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part).
Opacity	10 percent	6-minute averages	Performance test (Method 9 of appendix A of this part).
Oxides of nitrogen	388 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 7, 7A, 7C, 7D, or 7E of appendix A of this part).
Particulate matter	70 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 5 or 29 of appendix A of this part).
Sulfur dioxide	20 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c of appendix A of this part.

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.

[66 FR 16606, Mar. 27, 2001]

EFFECTIVE DATE NOTE: At 78 FR 9190, Feb. 7, 2013, table 1 to subpart CCCC of part 60 was amended by revising the table heading; revising the entry for ''Carbon monoxide''; revising the entry for ''Dioxin/Furan (toxic equivalency basis)''; revising the entry for ''Hydrogen Chloride''; revising the entry for ''Nitrogen Oxides''; revising the entry for ''Sulfur Dioxide'', effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

TABLE 1 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR CISWI UNITS FOR WHICH CONSTRUCTION IS COMMENCED AFTER NOVEMBER 30, 1999, BUT NO LATER THAN JUNE 4, 2010, OR FOR WHICH MODIFICATION OR RECONSTRUCTION IS COMMENCED ON OR AFTER JUNE 1, 2001, BUT NO LATER THAN AUGUST 7, 2013

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
* *	* *	*	* *
Carbon monoxide	157 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxin/Furan (toxic equivalency basis).	0.41 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 23 of appendix A–7 of this part).
Hydrogen chloride	62 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 120 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
* *	* *	*	* *
Nitrogen Oxides	388 parts per million by dry volume.	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
* *	* *	*	* *
Sulfur Dioxide	20 parts per million by dry volume.	3-run average (For Method 6, collect a minimum volume of 20 liters per run. For Method 6C, collect sample for a minimum duration of 1 hour per run).	Performance test (Method 6 or 6C at 40 CFR part 60, appendix A–4).

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.
[b] Incorporated by reference, *see* § 60.17.

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TABLE 2 TO SUBPART CCCC OF PART 60—OPERATING LIMITS FOR WET SCRUBBERS

For these operating parameters	You must establish these operating limits	And monitoring using these minimum frequencies		
		Data measurement	Data recording	Averaging time
Charge rate	Maximum charge rate	Continuous	Every hour	Daily (batch units) 3-hour rolling (continuous and intermittent units) [a]
Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage.	Continuous	Every 15 minutes	3-hour rolling [a]
Scrubber liquor flow rate	Minimum flow rate	Continuous	Every 15 minutes	3-hour rolling [a]
Scrubber liquor pH	Minimum pH	Continuous	Every 15 minutes	3-hour rolling [a]

[a] Calculated each hour as the average of the previous 3 operating hours.

[65 FR 75350, Dec. 1, 2000, as amended at 78 FR 9191, Feb. 7, 2013]

TABLE 3 TO SUBPART CCCC OF PART 60—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.001

TABLE 4 TO SUBPART CCCC OF PART 60—SUMMARY OF REPORTING REQUIREMENTS [A]

Report	Due date	Contents	Reference
Preconstruction report	Prior to commencing construction	• Statement of intent to construct • Anticipated date of commencement of construction • Documentation for siting requirements • Waste management plan • Anticipated date of initial startup	§ 60.2190

Report	Due date	Contents	Reference
Startup notification	Prior to initial startup	• Type of waste to be burned • Maximum design waste burning capacity • Anticipated maximum charge rate • If applicable, the petition for site-specific operating limits	§ 60.2195
Initial test report	No later than 60 days following the initial performance test	• Complete test report for the initial performance test • The values for the site-specific operating limits • Installation of bag leak detection system for fabric filter	§ 60.2200
Annual report	No later than 12 months following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 months following the previous report.	• Name and address • Statement and signature by responsible official. • Date of report • Values for the operating limits • Highest recorded 3-hour average and the lowest 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported. • If a performance test was conducted during the reporting period, the results of the test. • If a performance test was not conducted during the reporting period, a statement that the requirements of § 60.2155(a) were met. • Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours but less than 2 weeks. • If you are conducting performance tests once every 3 years consistent with § 60.2155(a), the date of the last 2 performance tests, a comparison of the emission level you achieved in the last 2 performance tests to the 75 percent emission limit threshold required in § 60.2155(a) and a statement as to whether there have been any operational changes since the last performance test that could increase emissions.	§§ 60.2205 and 60.2210.
Emission limitation or operating limit deviation report.	By August 1 of that year for data collected during the first half of the calendar year. By February 1 of the following year for data collected during the second half of the calendar year.	• Dates and times of deviation • Averaged and recorded data for those dates. • Duration and causes of each deviation and the corrective actions taken. • Copy of operating limit monitoring data and any test reports. • Dates, times and causes for monitor downtime incidents.	§ 60.2215 and 60.2220.
Qualified operator deviation notification.	Within 10 days of deviation	• Statement of cause of deviation • Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible	§ 60.2225(a)(1)
Qualified operator deviation status report.	Every 4 weeks following deviation	• Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible • Request for approval to continue operation	§ 60.2225(a)(2)

Report	Due date	Contents	Reference
Qualified operator deviation notification of resumed operation.	Prior to resuming operation	• Notification that you are resuming operation	§ 60.2225(b)

[a] This table is only a summary, see the referenced sections of the rule for the complete requirements.

65 FR 75350, Dec. 1, 2000, as amended at 76 FR 15763, Mar. 21, 2011]

TABLE 5 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR INCINERATORS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.0023 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meter per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8 of this part). Use ICPMS for the analytical finish.
Carbon Monoxide	12 parts per million by dry volume.	30 day rolling average	Carbon Monoxide CEMS (Performance Specification 4A of this part, using an RA of 0.5 ppm instead of 5 ppm as specified in section 13.2. For the cylinder gas audit, ± 15% or 0.5 ppm, whichever is greater.) Use a span gas with a concentration of 20 ppm or less.
Dioxin/furan (Total Mass Basis)	0.052 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meter per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxin/furan (toxic equivalency basis).	0.13 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meter per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Fugitive ash	Visible emissions for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 at 40 CFR part 60, appendix A–7).
Hydrogen Chloride	0.091 part per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 3 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.0019 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meter per run).	Performance test (Method 29 of appendix A–8 at 40 CFR part 60). Use ICPMS for the analytical finish.
Mercury	0.00016 milligrams per dry standard cubic meter.	3-run average (collect enough volume to meet a detection limit data quality objective of 0.03 μg/dry standard cubic meter).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008) [b].
Nitrogen Oxides	23 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 7E at 40 CFR part 60, appendix A–4). Use a span gas with a concentration of 50 ppm or less.
Particulate matter (filterable)	18 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 2 dry standard cubic meters per run).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8 at 40 CFR part 60).

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Sulfur dioxide	11 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6C at 40 CFR part 60, appendix A–4. Use a span gas with a concentration of 20 ppm or less.

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the Total Mass Limit or the toxic equivalency basis limit.
[b] Incorporated by reference, *see* § 60.17.

[76 FR 15763, Mar. 21, 2011, as amended at 78 FR 9191, Feb. 7, 2013]

EFFECTIVE DATE NOTE: At 78 FR 9191, Feb. 7, 2013, table 5 to subpart CCCC of part 60 was amended by revising the table heading; revising the entry for ''Carbon Monoxide''; revising the entry for ''Dioxin/furan (Total Mass Basis)''; revising the entry for ''Hydrogen chloride''; revising the entry for ''Lead''; revising the entry for ''Mercury''; revising the entry for ''Nitrogen Oxides''; revising the entry for ''Sulfur dioxide''; adding footnote c, effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

TABLE 5 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR INCINERATORS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER AUGUST 7, 2013

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
* *	* *	*	* *
Carbon monoxide	17 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxin/furan (Total Mass Basis)	0.58 nanograms per dry standard cubic meter [c].	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
* *	* *	*	* *
Hydrogen chloride	0.091 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 360 liters per run. For Method 26A, collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.015 milligrams per dry standard cubic meter [c].	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 of appendix A–8 at 40 CFR part 60). Use ICPMS for the analytical finish.
Mercury	0.00084 milligrams per dry standard cubic meter [c].	3-run average (collect enough volume to meet a detection limit data quality objective of 0.03 ug/dry standard cubic meter).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008).[b]
Nitrogen Oxides	23 parts per million dry volume.	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
* *	* *	*	* *
Sulfur dioxide	11 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6C at 40 CFR part 60, appendix A–4).
* *	* *	*	* *

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the Total Mass Limit or the toxic equivalency basis limit.
[b] Incorporated by reference, *see* § 60.17.
[c] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 60.2155 if all of the other provisions of § 60.2155 are met. For all other pollutants that do not contain a footnote ''c'', your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

TABLE 6 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR ENERGY RECOVERY UNITS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011

For the air pollutant	You must meet this emission limitation [a]		Using this averaging time	And determining compliance using this method
	Liquid/gas	Solids		
Cadmium	0.023 milligrams per dry standard cubic meter.	0.00051 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Carbon monoxide	36 parts per million dry volume. Coal—46 parts per million dry volume.	Biomass—160 parts per million dry volume.	30 day rolling average.	Carbon Monoxide CEMS (Performance Specification 4A of this part, using a RA of 0.5 ppm instead of 5 ppm as specified in section 13.2. For the cylinder gas audit, ±15% or 0.5 ppm, whichever is greater. Use a span gas with a concentration of 100 ppm or less for a liquid/gas or coal-fed boiler. Use a span gas with a concentration of 300 ppm or less for a biomass-fed boiler.
Dioxins/furans (Total Mass Basis).	No Total Mass Basis limit, must meet the toxic equivalency basis limit below.	0.068 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	0.002 nanograms per dry standard cubic meter.	0.011 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 23 of appendix A–7 of this part).
Fugitive ash	Visible emissions for no more than 5 percent of the hourly observation period.	Visible emissions for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	14 parts per million dry volume.	0.45 parts per million dry volume.	3-run average (For Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.096 milligrams per dry standard cubic meter.	0.00313 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.00025 milligrams per dry standard cubic meter.	0.00033 milligrams per dry standard cubic meter.	3-run average (collect enough volume to meet an in-stack detection limit data quality objective of 0.03 ug/dscm).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008).[b].
Oxides of nitrogen	76 parts per million dry volume.	Biomass—290 parts per million dry volume. Coal—340 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 7E at 40 CFR part 60, appendix A–4). Use a span gas with a concentration of 150 ppm or less for liquid/gas fuel boilers. Use a span gas with a concentration of 700 ppm or less for solid fuel boilers.

For the air pollutant	You must meet this emission limitation [a]		Using this averaging time	And determining compliance using this method
	Liquid/gas	Solids		
Particulate matter (filterable).	110 milligrams per dry standard cubic meter.	250 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8) if the unit has a design capacity less than 250 MMBtu/hr; or PM CEMS (performance specification 11 of appendix B of this part) if the unit has a design capacity equal to or greater than 250 MMBtu/hr. Use Method 5 or 5I of Appendix A of this part and collect a minimum sample volume of 1 dscm per test run for the PM CEMS correlation testing.
Sulfur dioxide	720 parts per million dry volume.	Biomass—6.2 parts per million dry volume. Coal—650 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6C at 40 CFR part 60, appendix A–4. Use a span gas with a concentration of 20 ppm or less for a biomass-fed boiler. Use a span gas with a concentration of 1500 ppm or less for a liquid/gas boiler or coal-fed boiler.

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the Total Mass Basis limit or the toxic equivalency basis limit.
[b] Incorporated by reference, *see* § 60.17.

[76 FR 15763, Mar. 21, 2011, as amended at 78 FR 9192, Feb. 7, 2013]

EFFECTIVE DATE NOTE: At 78 FR 9191, Feb. 7, 2013, table 6 to subpart CCCC of part 60 was amended by revising the table heading; revising the entry for ''Cadmium''; revising the entry for ''Carbon monoxide''; revising the entry for ''Dioxins/furans (Total Mass Basis)''; revising the entry for ''Dioxins/furans (toxic equivalency basis)''; revising the entry for ''Hydrogen chloride''; revising the entry for ''Lead''; revising the entry for ''Mercury''; revising the entry for ''Oxides of nitrogen''; revising the entry for ''Particulate matter (filterable)''; revising the entry for ''Sulfur dioxide''; adding footnote c, effective Aug. 7, 2013. For the convenience of the user, the added and revised text is set forth as follows:

TABLE 6 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR ENERGY RECOVERY UNITS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER AUGUST 7, 2013

For the air pollutant	You must meet this emission limitation [a]		Using this averaging time	And determining compliance using this method
	Liquid/Gas	Solids		
Cadmium	0.023 milligrams per dry standard cubic meter.	Biomass—0.0014 milligrams per dry standard cubic meter. [c] Coal—0.0095 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Carbon monoxide ...	35 parts per million dry volume.	Biomass—240 parts per million dry volume. Coal—95 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxin/furans (Total Mass Basis).	No Total Mass Basis limit, must meet the toxic equivalency basis limit below.	Biomass—0.52 nanograms per dry standard cubic meter. [c] Coal—5.1 nanograms per dry standard cubic meter. [c]	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).

For the air pollutant	You must meet this emission limitation [a]		Using this averaging time	And determining compliance using this method
	Liquid/Gas	Solids		
Dioxins/furans (toxic equivalency basis).	0.093 nanograms per dry standard cubic meter. [c]	Biomass—0.076 nanograms per dry standard cubic meter. [c] Coal—0.075 nanograms per dry standard cubic meter. [c]	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 23 of appendix A–7 of this part).
Hydrogen chloride ..	14 parts per million dry volume.	Biomass—0.20 parts per million dry volume. Coal—13 parts per million dry volume.	3-run average (For Method 26, collect a minimum volume of 360 liters per run. For Method 26A, collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.096 milligrams per dry standard cubic meter.	Biomass—0.014 milligrams per dry standard cubic meter. [c] Coal—0.14 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.00056 milligrams per dry standard cubic meter. [c]	Biomass—0.0022 milligrams per dry standard cubic meter. Coal—0.016 milligrams per dry standard cubic meter.	3-run average (collect enough volume to meet an in-stack detection limit data quality objective of 0.03 ug/dscm).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008)b.
Oxides of nitrogen ..	76 parts per million dry volume.	Biomass—290 parts per million dry volume. Coal—340 parts per million dry volume.	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Particulate matter (filterable).	110 milligrams per dry standard cubic meter.	Biomass—5.1 milligrams per dry standard cubic meter. Coal—160 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8) if the unit has an annual average heat input rate less than 250 MMBtu/hr; or PM CPMS (as specified in § 60.2145(x)) if the unit has an annual average heat input rate equal to or greater than 250 MMBtu/hr.
Sulfur dioxide	720 parts per million dry volume.	Biomass—7.3 parts per million dry volume. Coal—650 parts per million dry volume.	3-run average (for Method 6, collect a minimum of 60 liters, for Method 6C,1 hour minimum sample time per run).	Performance test (Method 6 or 6C at 40 CFR part 60, appendix A–4).

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the Total Mass Basis limit or the toxic equivalency basis limit.

[b] Incorporated by reference, *see* § 60.17.

[c] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 60.2155 if all of the other provisions of § 60.2155 are met. For all other pollutants that do not contain a footnote ''c'', your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

TABLE 7 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR WASTE-BURNING KILNS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.00048 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Carbon monoxide	90 parts per million dry volume.	30-day rolling average	Carbon monoxide CEMS (Performance Specification 4A of this part, using an RA of 1 ppm instead of 5 ppm as specified in section 13.2. For the cylinder gas audit, ± 15% or 0.5 ppm, whichever is greater). Use a span gas with a concentration of 200 ppm or less.
Dioxins/furans (total mass basis).	0.090 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	0.0030 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	3.0 parts per million dry volume.	3-run average (1 hour minimum sample time per run) or 30-day rolling average if HCl CEMS are used.	Performance test (Method 321 at 40 CFR part 63, appendix A) or HCl CEMS if a wet scrubber is not used.
Lead	0.0026 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0062 milligrams per dry standard cubic meter.	30-day rolling average	Mercury CEMS or sorbent trap monitoring system (performance specification 12A or 12B, respectively, of appendix B of this part.)
Oxides of nitrogen	200 [b] parts per million dry volume.	30-day rolling average	NO_X Continuous Emissions Monitoring System (performance specification 2 of appendix B of this part). Use a span gas with a concentration of 400 ppm or less.
Particulate matter (filterable)	2.5 milligrams per dry standard cubic meter.	30-day rolling average	PM Continuous Emissions Monitoring System (performance specification 11 of appendix B of this part).
Sulfur dioxide	38 parts per million dry volume.	30-day rolling average	Sulfur dioxide Continuous Emissions Monitoring System (performance specification 2 of appendix B of this part). Use a span gas with a concentration of 100 ppm or less.

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.

[b] NO_X limits for new waste-burning kilns based on data for best-performing similar source, Portland Cement kilns. *See* "CISWI Emission Limit Calculations for Existing and New Sources" for details.

[78 FR 9193, Feb. 7, 2013]

EFFECTIVE DATE NOTE: At 78 FR 9191, Feb. 7, 2013, table 7 to Subpart CCCC of part 60 was revised, effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

TABLE 7 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR WASTE-BURNING KILNS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR RECONSTRUCTION OR MODIFICATION AFTER AUGUST 7, 2013

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.0014 milligrams per dry standard cubic meter. [b]	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Carbon monoxide	90 (long kilns)/190 (preheater/precalciner) parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	0.51 nanograms per dry standard cubic meter. [b]	3-run average (collect a minimum volume of 4 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	0.075 nanograms per dry standard cubic meter. [b]	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	3.0 parts per million dry volume. [b]	3-run average (1 hour minimum sample time per run) or 30-day rolling average if HCl CEMS are used.	Performance test (Method 321 at 40 CFR part 63, appendix A) or HCl CEMS if a wet scrubber or dry scrubber is not used.
Lead	0.014 milligrams per dry standard cubic meter. [b]	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0037 milligrams per dry standard cubic meter.	30-day rolling average	Mercury CEMS or sorbent trap monitoring system (performance specification 12A or 12B, respectively, of appendix B of this part.)
Oxides of nitrogen	200 parts per million dry volume.	30-day rolling average	NOx CEMS (performance specification 2 of appendix B and procedure 1 of appendix F of this part).
Particulate matter (filterable)	2.2 milligrams per dry standard cubic meter.	30-day rolling average	PM CPMS (as specified in § 60.2145(x)).
Sulfur dioxide	28 parts per million dry volume.	30-day rolling average	Sulfur dioxide CEMS (performance specification 2 of appendix B and procedure 1 of appendix F of this part).

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the Total Mass Basis limit or the toxic equivalency basis limit.

[b] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 60.2155 if all of the other provisions of § 60.2155 are met. For all other pollutants that do not contain a footnote ''b'', your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

TABLE 8 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR SMALL, REMOTE INCINERATORS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER SEPTEMBER 21, 2011

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.61 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Carbon monoxide	12 parts per million dry volume.	24 hour block average	Carbon monoxide CEMS (Performance Specification 4A of this part, using a RA of 0.5 ppm instead of 5 ppm as specified in section 13.2. For the cylinder gas audit, ± 15% or 0.5 ppm, whichever is greater.). Use a span gas with a concentration of 25 ppm or less.
Dioxins/furans (total mass basis).	1,200 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	31 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Fugitive ash	Visible emissions for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	200 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 60 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.26 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic).	Performance test (Method 29 at 40 CFR part 60,appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0035 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008) [b], collect a minimum volume of 2 dry standard cubic meters per run. For Method 30B, collect a minimum volume as specified in Method 30B at 40 CFR part 60, appendix A).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008)b.
Oxides of nitrogen	78 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 7E at 40 CFR part 60,appendix A–4). Use a span gas with a concentration of 150 ppm or less.
Particulate matter (filterable)	230 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8).
Sulfur dioxide	1.2 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A–4. Use a span gas with a concentration of 5 ppm or less.

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.
[b] Incorporated by reference, *see* § 60.17.

[78 FR 9194, Feb. 7, 2013]

EFFECTIVE DATE NOTE: At 78 FR 9194, Feb. 7, 2013, table 8 to Subpart CCCC of part 60 was revised, effective Aug. 7, 2013. For the convenience of the user, the revised text is set forth as follows:

TABLE 8 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS FOR SMALL, REMOTE INCINERATORS THAT COMMENCED CONSTRUCTION AFTER JUNE 4, 2010, OR THAT COMMENCED RECONSTRUCTION OR MODIFICATION AFTER AUGUST 7, 2013

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.67 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).
Carbon monoxide	13 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	1,800 nanograms per dry standard cubic meter. [b]	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	31 nanograms per dry standard cubic meter. [b]	3-run average (collect a minimum volume of 1 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Fugitive ash	Visible emissions for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emissions test (Method 22 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	200 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 60 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	2.0 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0035 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008) [b], collect a minimum volume of 2 dry standard cubic meters per run. For Method 30B, collect a minimum volume as specified in Method 30B at 40 CFR part 60, appendix A).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008). [b]
Oxides of nitrogen	170 parts per million dry volume.	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Particulate matter (filterable)	270 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8).
Sulfur dioxide	1.2 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A–4).

[a] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the Total Mass Basis limit or the toxic equivalency basis limit.
[b] Incorporated by reference, *see* § 60.17.

Subpart DDDD—Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units

SOURCE: 65 FR 75362, Dec. 1, 2000, unless otherwise noted.

INTRODUCTION

§ 60.2500 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from commercial and industrial solid waste incineration (CISWI) units. The pollutants addressed by these emission guidelines are listed in table 2 of this subpart and tables 6 through 9 of this subpart. These emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act and subpart B of this part.

[76 FR 15769, Mar. 21, 2011]

§ 60.2505 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a state or United States protectorate with one or more existing CISWI units that meet the criteria in paragraphs (b) through (d) of this section, you must submit a state plan to U.S. Environmental Protection Agency (EPA) that implements the emission guidelines contained in this subpart.

(b) You must submit a state plan to EPA by December 3, 2001 for incinerator units that commenced construction on or before November 30, 1999 and that were not modified or reconstructed after June 1, 2001.

(c) You must submit a state plan that meets the requirements of this subpart and contains the more stringent emission limit for the respective pollutant in table 6 of this subpart or table 1 of subpart CCCC of this part to EPA by February 7, 2014 for incinerators that commenced construction after November 30, 1999, but no later than June 4, 2010, or commenced modification or reconstruction after June 1, 2001 but no later than August 7, 2013.

(d) You must submit a state plan to EPA that meets the requirements of this subpart and contains the emission limits in tables 7 through 9 of this subpart by February 7, 2014, for CISWI units other than incinerator units that commenced construction on or before June 4, 2010, or commenced modification or reconstruction after June 4, 2010 but no later than August 7, 2013.

[76 FR 15769, Mar. 21, 2011, as amended at 78 FR 9195, Feb. 7, 2013]

§ 60.2510 Is a State plan required for all States?

No. You are not required to submit a State plan if there are no existing CISWI units in your State, and you submit a negative declaration letter in place of the State plan.

§ 60.2515 What must I include in my State plan?

(a) You must include the nine items described in paragraphs (a)(1) through (9) of this section in your State plan.

(1) Inventory of affected CISWI units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected CISWI units in your State.

(3) Compliance schedules for each affected CISWI unit.

(4) Emission limitations, operator training and qualification requirements, a waste management plan, and operating limits for affected CISWI units that are at least as protective as the emission guidelines contained in this subpart.

(5) Performance testing, recordkeeping, and reporting requirements.

(6) Certification that the hearing on the State plan was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(7) Provision for State progress reports to EPA.

(8) Identification of enforceable State mechanisms that you selected for implementing the emission guidelines of this subpart.

(9) Demonstration of your State's legal authority to carry out the sections 111(d) and 129 State plan.

(b) Your State plan may deviate from the format and content of the emission guidelines contained in this subpart. However, if your State plan does deviate in content, you must demonstrate that your State plan is at least as protective as the emission guidelines contained in this subpart. Your State plan must address regulatory applicability,

increments of progress for retrofit, operator training and qualification, a waste management plan, emission limitations, performance testing, operating limits, monitoring, recordkeeping and reporting, and air curtain incinerator requirements.

(c) You must follow the requirements of subpart B of this part (Adoption and Submittal of State Plans for Designated Facilities) in your State plan.

§ 60.2520 Is there an approval process for my State plan?

Yes. The EPA will review your State plan according to § 60.27.

§ 60.2525 What if my state plan is not approvable?

(a) If you do not submit an approvable state plan (or a negative declaration letter) by December 2, 2002, EPA will develop a federal plan according to § 60.27 to implement the emission guidelines contained in this subpart. Owners and operators of CISWI units not covered by an approved state plan must comply with the federal plan. The federal plan is an interim action and will be automatically withdrawn when your state plan is approved.

(b) If you do not submit an approvable state plan (or a negative declaration letter) to EPA that meets the requirements of this subpart and contains the emission limits in tables 6 through 9 of this subpart for CISWI units that commenced construction on or before June 4, 2010, then EPA will develop a federal plan according to § 60.27 to implement the emission guidelines contained in this subpart. Owners and operators of CISWI units not covered by an approved state plan must comply with the federal plan. The federal plan is an interim action and will be automatically withdrawn when your state plan is approved.

[76 FR 15770, Mar. 21, 2011, as amended at 78 FR 9195, Feb. 7, 2013]

§ 60.2530 Is there an approval process for a negative declaration letter?

No. The EPA has no formal review process for negative declaration letters. Once your negative declaration letter has been received, EPA will place a copy in the public docket and publish a notice in the FEDERAL REGISTER. If, at a later date, an existing CISWI unit is found in your State, the Federal plan implementing the emission guidelines contained in this subpart would automatically apply to that CISWI unit until your State plan is approved.

§ 60.2535 What compliance schedule must I include in my State plan?

(a) For CISWI units in the incinerator subcategory that commenced construction on or before November 30, 1999, your state plan must include compliance schedules that require CISWI units to achieve final compliance as expeditiously as practicable after approval of the state plan but not later than the earlier of the two dates specified in paragraphs (a)(1) and (2) of this section.

(b) For CISWI units in the incinerator subcategory that commenced construction after November 30, 1999, but on or before June 4, 2010, and for CISWI units in the small remote incinerator, energy recovery unit, and waste-burning kiln subcategories that commenced construction before June 4, 2010, your state plan must include compliance schedules that require CISWI units to achieve final compliance as expeditiously as practicable after approval of the state plan but not later than the earlier of the two dates specified in paragraphs (b)(1) and (2) of this section.

(1) February 7, 2018.

(2) Three years after the effective date of State plan approval.

(c) For compliance schedules more than 1 year following the effective date of State plan approval, State plans must include dates for enforceable increments of progress as specified in § 60.2580.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15769, Mar. 21, 2011; 78 FR 9195, Feb. 7, 2013]

§ 60.2540 Are there any State plan requirements for this subpart that apply instead of the requirements specified in subpart B?

Yes. Subpart B establishes general requirements for developing and processing section 111(d) plans. This subpart applies instead of the requirements in subpart B of this part for paragraphs (a) and (b) of this section:

(a) State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all CISWI units to comply by the dates specified in § 60.2535. This applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in § 60.24(f).

(b) State plans developed to implement this subpart are required to include two increments of progress for the affected CISWI units. These two minimum increments are the final control plan submittal date and final compliance date in § 60.21(h)(1) and (5). This applies instead of the requirement of § 60.24(e)(1) that would require a State plan to include all five increments of progress for all CISWI units.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15770, Mar. 21, 2011]

§ 60.2541 In lieu of a state plan submittal, are there other acceptable option(s) for a state to meet its Clean Air Act section 111(d)/129(b)(2) obligations?

Yes, a state may meet its Clean Air Act section 111(d)/129 obligations by submitting an acceptable written request for delegation of the federal plan that meets the requirements of this section. This is the only other option for a state to meet its Clean Air Act section 111(d)/129 obligations.

(a) An acceptable federal plan delegation request must include the following:

(1) A demonstration of adequate resources and legal authority to administer and enforce the federal plan.

(2) The items under § 60.2515(a)(1), (2) and (7).

(3) Certification that the hearing on the state delegation request, similar to the hearing for a state plan submittal, was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(4) A commitment to enter into a Memorandum of Agreement with the Regional Administrator who sets forth the terms, conditions, and effective date of the delegation and that serves as the mechanism for the transfer of authority. Additional guidance and information is given in EPA's Delegation Manual, Item 7–139, Implementation and Enforcement of 111(d)(2) and 111(d)/(2)/129(b)(3) federal plans.

(b) A state with an already approved CISWI Clean Air Act section 111(d)/129 state plan is not precluded from receiving EPA approval of a delegation request for the revised federal plan, providing the requirements of paragraph (a) of this section are met, and at the time of the delegation request, the state also requests withdrawal of EPA's previous state plan approval.

(c) A state's Clean Air Act section 111(d)/129 obligations are separate from its obligations under Title V of the Clean Air Act.

[76 FR 15770, Mar. 21, 2011]

§ 60.2542 What authorities will not be delegated to state, local, or tribal agencies?

The authorities listed under § 60.2030(c) will not be delegated to state, local, or tribal agencies.

[76 FR 15770, Mar. 21, 2011]

§ 60.2545 Does this subpart directly affect CISWI unit owners and operators in my State?

(a) No. This subpart does not directly affect CISWI unit owners and operators in your State. However, CISWI unit owners and operators must comply with the State plan you develop to implement the emission guidelines contained in this subpart. States may choose to incorporate the model rule text directly in their State plan.

(b) If you do not submit an approvable plan to implement and enforce the guidelines contained in this subpart for CISWI units that commenced construction before November 30, 1999 by December 2, 2002, EPA will implement and enforce a federal plan, as provided in § 60.2525, to ensure that each unit within your state reaches compliance with all the provisions of this subpart by December 1, 2005.

(c) If you do not submit an approvable plan to implement and enforce the guidelines contained in this subpart by February 7, 2014, for CISWI units that commenced construction on or before June 4, 2010, EPA will implement and enforce a federal plan, as provided in

§ 60.2525, to ensure that each unit within your state that commenced construction on or before June 4, 2010, reaches compliance with all the provisions of this subpart by February 7, 2018.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15770, Mar. 21, 2011; 78 FR 9195, Feb. 7, 2013]

APPLICABILITY OF STATE PLANS

§ 60.2550 What CISWI units must I address in my State plan?

(a) Your State plan must address incineration units that meet all three criteria described in paragraphs (a)(1) through (3) of this section.

(1) CISWI units in your state that commenced construction on or before June 4, 2010, or commenced modification or reconstruction after June 4, 2010 but no later than August 7, 2013.

(2) Incineration units that meet the definition of a CISWI unit as defined in § 60.2875.

(3) Incineration units not exempt under § 60.2555.

(b) If the owner or operator of a CISWI unit makes changes that meet the definition of modification or reconstruction on or after June 1, 2001, the CISWI unit becomes subject to subpart CCCC of this part and the State plan no longer applies to that unit.

(c) If the owner or operator of a CISWI unit makes physical or operational changes to an existing CISWI unit primarily to comply with your State plan, subpart CCCC of this part does not apply to that unit. Such changes do not qualify as modifications or reconstructions under subpart CCCC of this part.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15771, Mar. 21, 2011; 78 FR 9195, Feb. 7,2013]

§ 60.2555 What combustion units are exempt from my State plan?

This subpart exempts the types of units described in paragraphs (a), (c) through (i), (m), and (n) of this section, but some units are required to provide notifications. Air curtain incinerators are exempt from the requirements in this subpart except for the provisions in §§ 60.2805, 60.2860, and 60.2870.

(a) *Pathological waste incineration units.* Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in § 60.2875 are not subject to this subpart if you meet the two requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

(b) [Reserved]

(c) *Municipal waste combustion units.* Incineration units that are subject to subpart Ea of this part (Standards of Performance for Municipal Waste Combustors); subpart Eb of this part (Standards of Performance for Large Municipal Waste Combustors); subpart Cb of this part (Emission Guidelines and Compliance Time for Large Municipal Combustors); AAAA of this part (Standards of Performance for Small Municipal Waste Combustion Units); or subpart BBBB of this part (Emission Guidelines for Small Municipal Waste Combustion Units).

(d) *Medical waste incineration units.* Incineration units regulated under subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996) or subpart Ca of this part (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators).

(e) *Small power production facilities.* Units that meet the three requirements specified in paragraphs (e)(1) through (3) of this section.

(1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You submit documentation to the Administrator notifying the Agency

that the qualifying small power production facility is combusting homogenous waste.

(4) You maintain the records specified in § 60.2740(v).

(f) *Cogeneration facilities.* Units that meet the three requirements specified in paragraphs (f)(1) through (3) of this section.

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You submit documentation to the Administrator notifying the Agency that the qualifying cogeneration facility is combusting homogenous waste.

(4) You maintain the records specified in § 60.2740(w).

(g) *Hazardous waste combustion units.* Units for which you are required to get a permit under section 3005 of the Solid Waste Disposal Act.

(h) *Materials recovery units.* Units that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters.

(i) *Air curtain incinerators.* Air curtain incinerators that burn only the materials listed in paragraphs (i)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2810 through 60.2870).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

(j)–(l) [Reserved]

(m) *Sewage treatment plants.* Incineration units regulated under subpart O of this part (Standards of Performance for Sewage Treatment Plants).

(n) *Sewage sludge incineration units.* Incineration units combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter that are subject to subpart LLLL of this part (Standards of Performance for Sewage Sludge Incineration Units) or subpart MMMM of this part (Emission Guidelines for Sewage Sludge Incineration Units).

(o) *Other solid waste incineration units.* Incineration units that are subject to subpart EEEE of this part (Standards of Performance for Other Solid Waste Incineration Units) or subpart FFFF of this part (Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units).

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15771, Mar. 21, 2011; 78 FR 9196, Feb. 7, 2013]

USE OF MODEL RULE

§ 60.2560 What is the "model rule" in this subpart?

(a) The model rule is the portion of these emission guidelines (§§ 60.2575 through 60.2875) that addresses the regulatory requirements applicable to CISWI units. The model rule provides these requirements in regulation format. You must develop a State plan that is at least as protective as the model rule. You may use the model rule language as part of your State plan. Alternative language may be used in your State plan if you demonstrate that the alternative language is at least as protective as the model rule contained in this subpart.

(b) In the model rule of §§ 60.2575 to 60.2875, ''you'' means the owner or operator of a CISWI unit.

§ 60.2565 How does the model rule relate to the required elements of my State plan?

Use the model rule to satisfy the State plan requirements specified in § 60.2515(a)(4) and (5).

§ 60.2570 What are the principal components of the model rule?

The model rule contains the eleven major components listed in paragraphs (a) through (k) of this section.

(a) Increments of progress toward compliance.

(b) Waste management plan.

(c) Operator training and qualification.

(d) Emission limitations and operating limits.

(e) Performance testing.

(f) Initial compliance requirements.

(g) Continuous compliance requirements.
(h) Monitoring.
(i) Recordkeeping and reporting.
(j) Definitions.
(k) Tables.

MODEL RULE—INCREMENTS OF PROGRESS

§ 60.2575 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of State plan approval, you must meet the two increments of progress specified in paragraphs (a) and (b) of this section.
(a) Submit a final control plan.
(b) Achieve final compliance.

§ 60.2580 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress.

§ 60.2585 What must I include in the notifications of achievement of increments of progress?

Your notification of achievement of increments of progress must include the three items specified in paragraphs (a) through (c) of this section.
(a) Notification that the increment of progress has been achieved.
(b) Any items required to be submitted with each increment of progress.
(c) Signature of the owner or operator of the CISWI unit.

§ 60.2590 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§ 60.2595 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in table 1 of this subpart. You must inform the Administrator that you did not meet the increment, and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§ 60.2600 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must satisfy the two requirements specified in paragraphs (a) and (b) of this section.
(a) Submit the final control plan that includes the five items described in paragraphs (a)(1) through (5) of this section.
(1) A description of the devices for air pollution control and process changes that you will use to comply with the emission limitations and other requirements of this subpart.
(2) The type(s) of waste to be burned.
(3) The maximum design waste burning capacity.
(4) The anticipated maximum charge rate.
(5) If applicable, the petition for site-specific operating limits under § 60.2680.
(b) Maintain an onsite copy of the final control plan.

§ 60.2605 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected CISWI unit is brought online, all necessary process changes and air pollution control devices would operate as designed.

§ 60.2610 What must I do if I close my CISWI unit and then restart it?

(a) If you close your CISWI unit but will restart it prior to the final compliance date in your State plan, you must meet the increments of progress specified in § 60.2575.
(b) If you close your CISWI unit but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limitations and operating limits on the date your unit restarts operation.

§ 60.2615 What must I do if I plan to permanently close my CISWI unit and not restart it?

If you plan to close your CISWI unit rather than comply with the State plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

MODEL RULE—WASTE MANAGEMENT PLAN

§ 60.2620 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§ 60.2625 When must I submit my waste management plan?

You must submit a waste management plan no later than the date specified in table 1 of this subpart for submittal of the final control plan.

§ 60.2630 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures, and the source must implement those measures considered practical and feasible, based on the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

§ 60.2635 What are the operator training and qualification requirements?

(a) No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily not accessible, you must follow the procedures in § 60.2665.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (3) of this section.

(1) Training on the eleven subjects listed in paragraphs (c)(1)(i) through (xi) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to prevent and correct malfunctions or to prevent conditions that may lead to malfunctions.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(xi) Waste management practices.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that can serve as reference material following completion of the course.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15771, Mar. 21, 2011]

§ 60.2640 When must the operator training course be completed?

The operator training course must be completed by the later of the three dates specified in paragraphs (a) through (c) of this section.

(a) The final compliance date (Increment 2).

(b) Six months after CISWI unit startup.

(c) Six months after an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.

§ 60.2645 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.2635(b).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.2635(c)(2).

§ 60.2650 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.

(c) Inspection and maintenance.

(d) Prevention and correction of malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15771, Mar. 21, 2011]

§ 60.2655 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.2650.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.2645(a).

§ 60.2660 What site-specific documentation is required?

(a) Documentation must be available at the facility and readily accessible for all CISWI unit operators that addresses the ten topics described in paragraphs (a)(1) through (10) of this section. You must maintain this information and the training records required by paragraph (c) of this section in a manner that they can be readily accessed and are suitable for inspection upon request.

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Monitoring procedures for demonstrating compliance with the incinerator operating limits.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§ 60.2620 through 60.2630.

(9) Procedures for handling ash.

(10) A list of the wastes burned during the performance test.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted by the later of the three dates specified in paragraphs (b)(1)(i) through (iii) of this section.

(i) The final compliance date (Increment 2).

(ii) Six months after CISWI unit startup.

(iii) Six months after being assigned to operate the CISWI unit.

(2) Subsequent annual reviews of the information listed in paragraph (a) of this section must be conducted no later than 12 months following the previous review.

(c) You must also maintain the information specified in paragraphs (c)(1) through (3) of this section.

(1) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2660(a) as required by § 60.2660(b), including the date of the initial review and all subsequent annual reviews.

(2) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2635, met the criteria for qualification under § 60.2645, and maintained or renewed their qualification under § 60.2650 or § 60.2655. Records must include documentation of training, the dates of the initial refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

§ 60.2665 What if all the qualified operators are temporarily not accessible?

If all qualified operators are temporarily not accessible (i.e., not at the facility and not able to be at the facility within 1 hour), you must meet one of the two criteria specified in paragraphs (a) and (b) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When all qualified operators are not accessible for more than 8 hours, but less than 2 weeks, the CISWI unit may be operated by other plant personnel familiar with the operation of the CISWI unit who have completed a review of the information specified in § 60.2660(a) within the past 12 months. However, you must record the period when all qualified operators were not accessible and include this deviation in the annual report as specified under § 60.2770.

(b) When all qualified operators are not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (b)(1) and (2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to the Administrator every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible and requesting approval from the Administrator to continue operation of the CISWI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (b)(1) of this section. If the Administrator notifies you that your request to continue operation of the CISWI unit is disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if you meet the two requirements in paragraphs (b)(2)(i) and (ii) of this section.

(i) A qualified operator is accessible as required under § 60.2635(a).

(ii) You notify the Administrator that a qualified operator is accessible and that you are resuming operation.

MODEL RULE—EMISSION LIMITATIONS AND OPERATING LIMITS

§ 60.2670 What emission limitations must I meet and by when?

(a) You must meet the emission limitations for each CISWI unit, including bypass stack or vent, specified in table 2 of this subpart or tables 6 through 9 of this subpart by the final compliance date under the approved state plan, federal plan, or delegation, as applicable. The emission limitations apply at all times the unit is operating including and not limited to startup, shutdown, or malfunction.

(b) Units that do not use wet scrubbers must maintain opacity to less than or equal to the percent opacity (three 1-hour blocks consisting of ten 6-minute average opacity values) specified in table 2 of this subpart, as applicable.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15771, Mar. 21, 2011]

§ 60.2675 What operating limits must I meet and by when?

(a) If you use a wet scrubber(s) to comply with the emission limitations,

you must establish operating limits for up to four operating parameters (as specified in table 3 of this subpart) as described in paragraphs (a)(1) through (4) of this section during the initial performance test.

(1) Maximum charge rate, calculated using one of the two different procedures in paragraph (a)(1)(i) or (ii), as appropriate.

(i) For continuous and intermittent units, maximum charge rate is 110 percent of the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(ii) For batch units, maximum charge rate is 110 percent of the daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(2) Minimum pressure drop across the wet particulate matter scrubber, which is calculated as the lowest 1-hour average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the wet scrubber, which is calculated as the lowest 1-hour average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(3) Minimum scrubber liquid flow rate, which is calculated as the lowest 1-hour average liquid flow rate at the inlet to the wet acid gas or particulate matter scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(4) Minimum scrubber liquor pH, which is calculated as the lowest 1-hour average liquor pH at the inlet to the wet acid gas scrubber measured during the most recent performance test demonstrating compliance with the HCl emission limitation.

(b) You must meet the operating limits established during the initial performance test on the date the initial performance test is required or completed (whichever is earlier). You must conduct an initial performance evaluation of each continuous monitoring system and continuous parameter monitoring system within 60 days of installation of the monitoring system.

(c) If you use a fabric filter to comply with the emission limitations, you must operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by you to initiate corrective action.

(d) If you use an electrostatic precipitator to comply with the emission limitations, you must measure the (secondary) voltage and amperage of the electrostatic precipitator collection plates during the particulate matter performance test. Calculate the average electric power value (secondary voltage × secondary current = secondary electric power) for each test run. The operating limit for the electrostatic precipitator is calculated as the lowest 1-hour average secondary electric power measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(e) If you use activated carbon sorbent injection to comply with the emission limitations, you must measure the sorbent flow rate during the performance testing. The operating limit for the carbon sorbent injection is calculated as the lowest 1-hour average sorbent flow rate measured during the most recent performance test demonstrating compliance with the mercury emission limitations. For energy recovery units, when your unit operates at lower loads, multiply your sorbent injection rate by the load fraction, as defined in this subpart, to determine the required injection rate (e.g., for 50 percent load, multiply the injection rate operating limit by 0.5).

(f) If you use selective noncatalytic reduction to comply with the emission

limitations, you must measure the charge rate, the secondary chamber temperature (if applicable to your CISWI unit), and the reagent flow rate during the nitrogen oxides performance testing. The operating limits for the selective noncatalytic reduction are calculated as the highest 1-hour average charge rate, lowest secondary chamber temperature, and lowest reagent flow rate measured during the most recent performance test demonstrating compliance with the nitrogen oxides emission limitations.

(g) If you use a dry scrubber to comply with the emission limitations, you must measure the injection rate of each sorbent during the performance testing. The operating limit for the injection rate of each sorbent is calculated as the lowest 1-hour average injection rate of each sorbent measured during the most recent performance test demonstrating compliance with the hydrogen chloride emission limitations. For energy recovery units, when your unit operates at lower loads, multiply your sorbent injection rate by the load fraction, as defined in this subpart, to determine the required injection rate (e.g., for 50 percent load, multiply the injection rate operating limit by 0.5).

(h) If you do not use a wet scrubber, electrostatic precipitator, or fabric filter to comply with the emission limitations, and if you do not determine compliance with your particulate matter emission limitation with a particulate matter CEMS, you must maintain opacity to less than or equal to ten percent opacity (1-hour block average).

(i) If you use a PM CPMS to demonstrate compliance, you must establish your PM CPMS operating limit and determine compliance with it according to paragraphs (i)(1) through (5) of this section.

(1) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record all hourly average output values (milliamps) from the PM CPMS for the periods corresponding to the test runs (e.g., three 1-hour average PM CPMS output values for three 1-hour test runs).

(i) Your PM CPMS must provide a 4–20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps.

(ii) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to at least two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit.

(iii) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for the periods corresponding to the compliance test runs (e.g., average all your PM CPMS output values for three corresponding 2-hour Method 5I test runs).

(2) If the average of your three PM performance test runs are below 75% of your PM emission limit, you must calculate an operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM concentration from the Method 5 or performance test with the procedures in (i)(1)through (5) of this section.

(i) Determine your instrument zero output with one of the following procedures:

(A) Zero point data for *in-situ* instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench.

(B) Zero point data for extractive instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air.

(C) The zero point can also can be established obtained by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (*e.g.*, when your process is

not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept.

(D) If none of the steps in paragraphs (i)(2)(i) through (iv) of this section are possible, you must use a zero output value provided by the manufacturer.

(ii) Determine your PM CPMS instrument average in milliamps, and the average of your corresponding three PM compliance test runs, using equation 5.

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} X_1 , \bar{y} = \frac{1}{n}\sum_{i=1}^{n} Y_1 \qquad \text{(Eq. 5)}$$

Where:

X_1 = the PM CPMS data points for the three runs constituting the performance test,

Y_1 = the PM concentration value for the three runs constituting the performance test, and

n = the number of data points.

(iii) With your instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM concentration from your three compliance tests, determine a relationship of lb/Mmbtu per milliamp with equation 6.

$$R = \frac{Y_1}{(X_1 - z)} \qquad \text{(Eq. 6)}$$

Where:

R = the relative mg/dscm per milliamp for your PM CPMS,

Y_1 = the three run average mg/dscm PM concentration,

X_1 = the three run average milliamp output from you PM CPMS, and

z = the milliamp equivalent of your instrument zero determined from (2)(i).

(iv) Determine your source specific 30-day rolling average operating limit using the mg/dscm per milliamp value from Equation 6 in equation 7, below. This sets your operating limit at the PM CPMS output value corresponding to 75% of your emission limit.

$$O_i = z + \frac{0.75(L)}{R} \qquad \text{(Eq. 7)}$$

Where:

O_i = the operating limit for your PM CPMS on a 30-day rolling average, in milliamps.

L = your source emission limit expressed in lb/Mmbtu,

z = your instrument zero in milliamps, determined from (2)(a), and

R = the relative mg/dscm per milliamp for your PM CPMS, from Equation 3.

(3) If the average of your three PM compliance test runs is at or above 75% of your PM emission limit you must determine your operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using equation 8 and you must submit all compliance test and PM CPMS data according to the reporting requirements in paragraph (i)(5) of this section.

$$O_h = \frac{1}{n}\sum_{i=1}^{n} X_1 \qquad \text{(Eq. 8)}$$

Where:

X_1 = the PM CPMS data points for all runs i,
n = the number of data points, and
O_h = your site specific operating limit, in milliamps.

(4) To determine continuous compliance, you must record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. You must demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (e.g., milliamps, PM concentration, raw data signal) on a 30-day rolling average basis.

(5) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g., beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signals corresponding to each PM compliance test run.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15771, Mar. 21, 2011; 78 FR 9196, Feb. 7, 2013]

§ 60.2680 What if I do not use a wet scrubber, fabric filter, activated carbon injection, selective noncatalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations?

(a) If you use an air pollution control device other than a wet scrubber, activated carbon injection, selective noncatalytic reduction, fabric filter, an electrostatic precipitator, or a dry scrubber or limit emissions in some other manner, including mass balances, to comply with the emission limitations under § 60.2670, you must petition the EPA Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. You must submit the petition at least sixty days before the performance test is scheduled to begin. Your petition must include the five items listed in paragraphs (a)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as additional operating limits.

(2) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters and how limits on these parameters will serve to limit emissions of regulated pollutants.

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the operating limits on these parameters.

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(b) [Reserved]

[76 FR 15772, Mar. 21, 2011, as amended at 78 FR 9197, Feb. 7, 2013]

§ 60.2685 Affirmative defense for violation of emission standards during malfunction.

In response to an action to enforce the standards set forth in paragraph § 60.2670 you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be

available for claims for injunctive relief.

(a) *Assertion of affirmative defense.* To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(3) The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected CISWI unit was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) *Report.* The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

[78 FR 9197, Feb. 7, 2013]

MODEL RULE—PERFORMANCE TESTING

§ 60.2690 How do I conduct the initial and annual performance test?

(a) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) You must document that the waste burned during the performance test is representative of the waste burned under normal operating conditions by maintaining a log of the quantity of waste burned (as required in § 60.2740(b)(1)) and the types of waste burned during the performance test.

(c) All performance tests must be conducted using the minimum run duration specified in tables 2 and 6 through 9 of this subpart.

(d) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(e) Method 3A or 3B of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B of appendix A of this part must be used simultaneously with each method.

(f) All pollutant concentrations, except for opacity, must be adjusted to 7 percent oxygen using Equation 1 of this section:

$$C_{adj} = C_{meas} (20.9 - 7)/(20.9 - \%O_2) \quad \text{(Eq. 1)}$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;

C_{meas} = pollutant concentration measured on a dry basis;

(20.9 − 7) = 20.9 percent oxygen − 7 percent oxygen (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

$\%O_2$ = oxygen concentration measured on a dry basis, percent.

(g) You must determine dioxins/furans toxic equivalency by following the procedures in paragraphs (g)(1) through (4) of this section.

(1) Measure the concentration of each dioxin/furan tetra- through octa-isomer emitted using EPA Method 23 at 40 CFR part 60, appendix A.

(2) Quantify isomers meeting identification criteria 2, 3, 4, and 5 in Section 5.3.2.5 of Method 23, regardless of whether the isomers meet identification criteria 1 and 7. You must quantify the isomers per Section 9.0 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers not meeting identification criteria 1 or 7 of Section 5.3.2.5.)

(3) For each dioxin/furan (tetra- through octa-chlorinated) isomer measured in accordance with paragraph (g)(1) and (2) of this section, multiply the isomer concentration by its corresponding toxic equivalency factor specified in table 4 of this subpart.

(4) Sum the products calculated in accordance with paragraph (g)(3) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(h) Method 22 at 40 CFR part 60, appendix A–7 must be used to determine compliance with the fugitive ash emission limit in table 2 of this subpart or tables 6 through 9 of this subpart.

(i) If you have an applicable opacity operating limit, you must determine compliance with the opacity limit using Method 9 at 40 CFR part 60, appendix A–4, based on three 1-hour blocks consisting of ten 6-minute average opacity values, unless you are required to install a continuous opacity monitoring system, consistent with § 60.2710 and § 60.2730.

(j) You must determine dioxins/furans total mass basis by following the procedures in paragraphs (j)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan tetra- through octa-chlorinated isomer emitted using EPA Method 23 at 40 CFR part 60, appendix A–7.

(2) Quantify isomers meeting identification criteria 2, 3, 4, and 5 in Section 5.3.2.5 of Method 23, regardless of whether the isomers meet identification criteria 1 and 7. You must quantify the isomers per Section 9.0 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers not meeting identification criteria 1 or 7 of Section 5.3.2.5.)

(3) Sum the quantities measured in accordance with paragraphs (j)(1) and (2) of this section to obtain the total concentration of dioxins/furans emitted in terms of total mass basis.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15773, Mar. 21, 2011; 78 FR 9198, Feb. 7, 2013]

§ 60.2695 How are the performance test data used?

You use results of performance tests to demonstrate compliance with the emission limitations in table 2 of this subpart or tables 6 through 9 of this subpart.

[76 FR 15773, Mar. 21, 2011]

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

§ 60.2700 How do I demonstrate initial compliance with the amended emission limitations and establish the operating limits?

You must conduct a performance test, as required under §§ 60.2690 and 60.2670, to determine compliance with the emission limitations in table 2 of

this subpart and tables 6 through 9 of this subpart, to establish compliance with any opacity operating limits in § 60.2675, and to establish operating limits using the procedures in § 60.2675 or § 60.2680. The performance test must be conducted using the test methods listed in table 2 of this subpart and tables 6 through 9 of this subpart and the procedures in § 60.2690. The use of the bypass stack during a performance test shall invalidate the performance test. You must conduct a performance evaluation of each continuous monitoring system within 60 days of installation of the monitoring system.

[76 FR 15773, Mar. 21, 2011]

§ 60.2705 By what date must I conduct the initial performance test?

(a) The initial performance test must be conducted no later than 180 days after your final compliance date. Your final compliance date is specified in table 1 of this subpart.

(b) If you commence or recommence combusting a solid waste at an existing combustion unit at any commercial or industrial facility and you conducted a test consistent with the provisions of this subpart while combusting the given solid waste within the 6 months preceding the reintroduction of that solid waste in the combustion chamber, you do not need to retest until 6 months from the date you reintroduce that solid waste.

(c) If you commence combusting or recommence combusting a solid waste at an existing combustion unit at any commercial or industrial facility and you have not conducted a performance test consistent with the provisions of this subpart while combusting the given solid waste within the 6 months preceding the reintroduction of that solid waste in the combustion chamber, you must conduct a performance test within 60 days commencing or recommencing solid waste combustion.

[76 FR 15773, Mar. 21, 2011]

§ 60.2706 By what date must I conduct the initial air pollution control device inspection?

(a) The initial air pollution control device inspection must be conducted within 60 days after installation of the control device and the associated CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after the final compliance date for meeting the amended emission limitations.

(b) Within 10 operating days following an air pollution control device inspection, all necessary repairs must be completed unless the owner or operator obtains written approval from the state agency establishing a date whereby all necessary repairs of the designated facility must be completed.

[76 FR 15773, Mar. 21, 2011]

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.2710 How do I demonstrate continuous compliance with the amended emission limitations and the operating limits?

(a) Compliance with standards.

(1) The emission standards and operating requirements set forth in this subpart apply at all times.

(2) If you cease combusting solid waste you may opt to remain subject to the provisions of this subpart. Consistent with the definition of CISWI unit, you are subject to the requirements of this subpart at least 6 months following the last date of solid waste combustion. Solid waste combustion is ceased when solid waste is not in the combustion chamber (*i.e.*, the solid waste feed to the combustor has been cut off for a period of time not less than the solid waste residence time).

(3) If you cease combusting solid waste you must be in compliance with any newly applicable standards on the effective date of the waste-to-fuel switch. The effective date of the waste-to-fuel switch is a date selected by you, that must be at least 6 months from the date that you ceased combusting solid waste, consistent with § 60.2710(a)(2). Your source must remain in compliance with this subpart until the effective date of the waste-to-fuel switch.

(4) If you own or operate an existing commercial or industrial combustion unit that combusted a fuel or non-waste material, and you commence or recommence combustion of solid waste, you are subject to the provisions of

this subpart as of the first day you introduce or reintroduce solid waste to the combustion chamber, and this date constitutes the effective date of the fuel-to-waste switch. You must complete all initial compliance demonstrations for any Section 112 standards that are applicable to your facility before you commence or recommence combustion of solid waste. You must provide 30 days prior notice of the effective date of the waste-to-fuel switch. The notification must identify:

(i) The name of the owner or operator of the CISWI unit, the location of the source, the emissions unit(s) that will cease burning solid waste, and the date of the notice;

(ii) The currently applicable subcategory under this subpart, and any 40 CFR part 63 subpart and subcategory that will be applicable after you cease combusting solid waste;

(iii) The fuel(s), non-waste material(s) and solid waste(s) the CISWI unit is currently combusting and has combusted over the past 6 months, and the fuel(s) or non-waste materials the unit will commence combusting;

(iv) The date on which you became subject to the currently applicable emission limits;

(v) The date upon which you will cease combusting solid waste, and the date (if different) that you intend for any new requirements to become applicable (*i.e.*, the effective date of the waste-to-fuel switch), consistent with paragraphs (a)(2) and (3) of this section.

(5) All air pollution control equipment necessary for compliance with any newly applicable emissions limits which apply as a result of the cessation or commencement or recommencement of combusting solid waste must be installed and operational as of the effective date of the waste-to-fuel, or fuel-to-waste switch.

(6) All monitoring systems necessary for compliance with any newly applicable monitoring requirements which apply as a result of the cessation or commencement or recommencement of combusting solid waste must be installed and operational as of the effective date of the waste-to-fuel, or fuel-to-waste switch. All calibration and drift checks must be performed as of the effective date of the waste-to-fuel, or fuel-to-waste switch. Relative accuracy tests must be performed as of the performance test deadline for PM CEMS (if PM CEMS are elected to demonstrate continuous compliance with the particulate matter emission limits). Relative accuracy testing for other CEMS need not be repeated if that testing was previously performed consistent with section 112 monitoring requirements or monitoring requirements under this subpart.

(b) You must conduct an annual performance test for the pollutants listed in table 2 of this subpart or tables 6 through 9 of this subpart and opacity for each CISWI unit as required under § 60.2690. The annual performance test must be conducted using the test methods listed in table 2 of this subpart or tables 6 through 9 of this subpart and the procedures in § 60.2690. Opacity must be measured using EPA Reference Method 9 at 40 CFR part 60. Annual performance tests are not required if you use CEMS or continuous opacity monitoring systems to determine compliance.

(c) You must continuously monitor the operating parameters specified in § 60.2675 or established under § 60.2680 and as specified in § 60.2735. Operation above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Three-hour block average values are used to determine compliance (except for baghouse leak detection system alarms) unless a different averaging period is established under § 60.2680 or, for energy recovery units, where the averaging time for each operating parameter is a 30-day rolling, calculated each hour as the average of the previous 720 operating hours. Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests.

(d) You must burn only the same types of waste and fuels used to establish subcategory applicability (for ERUs) and operating limits during the performance test.

(e) For energy recovery units, incinerators, and small remote units, you must perform annual visual emissions test for ash handling.

(f) For energy recovery units, you must conduct an annual performance test for opacity using EPA Reference Method 9 at 40 CFR part 60 (except where particulate matter continuous monitoring system or continuous parameter monitoring systems are used) and the pollutants listed in table 7 of this subpart.

(g) For facilities using a CEMS to demonstrate compliance with the carbon monoxide emission limit, compliance with the carbon monoxide emission limit may be demonstrated by using the CEMS according to the following requirements:

(1) You must measure emissions according to §60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. You must demonstrate initial compliance with the carbon monoxide emissions limit using a 30-day rolling average of the 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7.

(2) Operate the carbon monoxide continuous emissions monitoring system in accordance with the applicable requirements of performance specification 4A of appendix B and the quality assurance procedures of appendix F of this part.

(h) Coal and liquid/gas energy recovery units with annual average heat input rates greater than 250 MMBtu/hr may elect to demonstrate continuous compliance with the particulate matter emissions limit using a particulate matter CEMS according to the procedures in §60.2730(n) instead of the continuous parameter monitoring system specified in §60.2710(i). Coal and liquid/gas energy recovery units with annual average heat input rates less than 250 MMBtu/hr, incinerators, and small remote incinerators may also elect to demonstrate compliance using a particulate matter CEMS according to the procedures in §60.2730(n) instead of particulate matter testing with EPA Method 5 at 40 CFR part 60, appendix A–3 and, if applicable, the continuous opacity monitoring requirements in paragraph (i) of this section.

(i) For energy recovery units with annual average heat input rates greater than or equal to 10 MMBTU/hour but less than 250 MMBtu/hr you must install, operate, certify and maintain a continuous opacity monitoring system (COMS) according to the procedures in §60.2730.

(j) For waste-burning kilns, you must conduct an annual performance test for the pollutants (except mercury and particulate matter, and hydrogen chloride if no acid gas wet scrubber is used) listed in table 8 of this subpart. If your waste-burning kiln is not equipped with a wet scrubber or dry scrubber, you must determine compliance with the hydrogen chloride emission limit using a CEMS as specified in §60.2730. You must determine compliance with particulate matter using CPMS. You must determine compliance with the mercury emissions limit using a mercury CEMS according to the following requirements:

(1) Operate a CEMS in accordance with performance specification 12A at 40 CFR part 60, appendix B or a sorbent trap based integrated monitor in accordance with performance specification 12B at 40 CFR part 60, appendix B. The duration of the performance test must be a calendar month. For each calendar month in which the waste-burning kiln operates, hourly mercury concentration data and stack gas volumetric flow rate data must be obtained. You must demonstrate compliance with the mercury emissions limit using a 30-day rolling average of these 1-hour mercury concentrations, including CEMS data during startup and shutdown as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this

part. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content.

(2) Owners or operators using a mercury continuous emissions monitoring systems must install, operate, calibrate and maintain an instrument for continuously measuring and recording the mercury mass emissions rate to the atmosphere according to the requirements of performance specifications 6 and 12A at 40 CFR part 60, appendix B and quality assurance procedure 5 at 40 CFR part 60, appendix F.

(3) The owner or operator of a waste-burning kiln must demonstrate initial compliance by operating a mercury CEMS while the raw mill of the in-line kiln/raw mill is operating under normal conditions and including at least one period when the raw mill is off.

(k) If you use an air pollution control device to meet the emission limitations in this subpart, you must conduct an initial and annual inspection of the air pollution control device. The inspection must include, at a minimum, the following:

(1) Inspect air pollution control device(s) for proper operation.

(2) Develop a site-specific monitoring plan according to the requirements in paragraph (l) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 60.13(i).

(l) For each CMS required in this section, you must develop and submit to the EPA Administrator for approval a site-specific monitoring plan according to the requirements of this paragraph (l) that addresses paragraphs (l)(1)(i) through (vi) of this section.

(1) You must submit this site-specific monitoring plan at least 60 days before your initial performance evaluation of your continuous monitoring system.

(i) Installation of the continuous monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer and the data collection and reduction systems.

(iii) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations).

(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of § 60.11(d).

(v) Ongoing data quality assurance procedures in accordance with the general requirements of § 60.13.

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 60.7(b),(c), (c)(1), (c)(4), (d), (e), (f) and (g).

(2) You must conduct a performance evaluation of each continuous monitoring system in accordance with your site-specific monitoring plan.

(3) You must operate and maintain the continuous monitoring system in continuous operation according to the site-specific monitoring plan.

(m) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (l) and (m)(1) through (4) of this section.

(1) Install the flow sensor and other necessary equipment in a position that provides a representative flow.

(2) Use a flow sensor with a measurement sensitivity at full scale of no greater than 2 percent.

(3) Minimize the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(4) Conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(n) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (l) and (n)(1) through (6) of this section.

(1) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (*e.g.*, PM scrubber pressure drop).

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(3) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.

(4) Perform checks at the frequency outlined in your site-specific monitoring plan to ensure pressure measurements are not obstructed (e.g., check for pressure tap pluggage daily).

(5) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(6) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in your monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.

(o) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (l) and (o)(1) through (4) of this section.

(1) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.

(2) Ensure the sample is properly mixed and representative of the fluid to be measured.

(3) Conduct a performance evaluation of the pH monitoring system in accordance with your monitoring plan at least once each process operating day.

(4) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than quarterly.

(p) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator, you must meet the requirements in paragraphs (l) and (p)(1) through (2) of this section.

(1) Install sensors to measure (secondary) voltage and current to the precipitator collection plates.

(2) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(q) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (*e.g.*, weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (l) and (q)(1) through (3) of this section.

(1) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.

(2) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(r) If you elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (l) and (r)(1) through (5) of this section.

(1) Install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive pressure fabric filter) of the fabric filter.

(2) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(3) Conduct a performance evaluation of the bag leak detection system in accordance with your monitoring plan and consistent with the guidance provided in EPA–454/R–98–015 (incorporated by reference, *see* § 60.17).

(4) Use a bag leak detection system equipped with a device to continuously record the output signal from the sensor.

(5) Use a bag leak detection system equipped with a system that will sound

an alarm when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is observed readily by plant operating personnel.

(s) For facilities using a CEMS to demonstrate compliance with the sulfur dioxide emission limit, compliance with the sulfur dioxide emission limit may be demonstrated by using the CEMS specified in § 60.2730 to measure sulfur dioxide. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. You must calculate a 30-day rolling average of the 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7. The sulfur dioxide CEMS must be operated according to performance specification 2 in appendix B of this part and must follow the procedures and methods specified in this paragraph(s). For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet sulfur dioxide CEMS should be no greater than 20 percent of the mean value of the reference method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference between the reference method and the CEMS, whichever is greater.

(1) During each relative accuracy test run of the CEMS required by performance specification 2 in appendix B of this part, collect sulfur dioxide and oxygen (or carbon dioxide) data concurrently (or within a 30- to 60-minute period) with both the CEMS and the test methods specified in paragraphs (s)(1)(i) and (ii) of this section.

(i) For sulfur dioxide, EPA Reference Method 6 or 6C, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17) must be used.

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17), as applicable, must be used.

(2) The span value of the CEMS at the inlet to the sulfur dioxide control device must be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the unit subject to this rule. The span value of the CEMS at the outlet of the sulfur dioxide control device must be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the unit subject to this rule.

(3) Conduct accuracy determinations quarterly and calibration drift tests daily in accordance with procedure 1 in appendix F of this part.

(t) For facilities using a CEMS to demonstrate continuous compliance with the nitrogen oxides emission limit, compliance with the nitrogen oxides emission limit may be demonstrated by using the CEMS specified in § 60.2730 to measure nitrogen oxides. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. You must calculate a 30-day rolling average of the 1-hour arithmetic average emission concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7. The nitrogen oxides CEMS must be operated according to performance specification 2 in appendix B of this part and must follow the procedures and methods specified in paragraphs (t)(1) through (t)(5) of this section.

(1) During each relative accuracy test run of the CEMS required by performance specification 2 of appendix B of this part, collect nitrogen oxides and oxygen (or carbon dioxide) data concurrently (or within a 30- to 60-minute period) with both the CEMS and the test methods specified in paragraphs (t)(1)(i) and (ii) of this section.

(i) For nitrogen oxides, EPA Reference Method 7 or 7E at 40 CFR part 60, appendix A–4 must be used.

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17), as applicable, must be used.

(2) The span value of the CEMS must be 125 percent of the maximum estimated hourly potential nitrogen oxide emissions of unit.

(3) Conduct accuracy determinations quarterly and calibration drift tests daily in accordance with procedure 1 in appendix F of this part.

(4) The owner or operator of an affected facility may request that compliance with the nitrogen oxides emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels must be established during the initial performance test according to the procedures and methods specified in paragraphs (t)(4)(i) through (t)(4)(iv) of this section. This relationship may be reestablished during performance compliance tests.

(i) The fuel factor equation in Method 3B must be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Method 3A, 3B, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17), as applicable, must be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

(ii) Samples must be taken for at least 30 minutes in each hour.

(iii) Each sample must represent a 1-hour average.

(iv) A minimum of 3 runs must be performed.

(u) For facilities using a continuous emissions monitoring system to demonstrate continuous compliance with any of the emission limits of this subpart, you must complete the following:

(1) Demonstrate compliance with the appropriate emission limit(s) using a 30-day rolling average of 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown, as defined in this subpart, calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content.

(2) Operate all CEMS in accordance with the applicable procedures under appendices B and F of this part.

(v) Use of the bypass stack at any time is an emissions standards deviation for particulate matter, HCl, Pb, Cd, Hg, NO_X, SO_2, and dioxin/furans.

(w) For energy recovery units with a design heat input capacity of 100 MMBtu per hour or greater that do not use a carbon monoxide CEMS, you must install, operate, and maintain an oxygen analyzer system as defined in § 60.2875 according to the procedures in paragraphs (w)(1) through (4) of this section.

(1) The oxygen analyzer system must be installed by the initial performance test date specified in § 60.2675.

(2) You must operate the oxygen trim system within compliance with paragraph (w)(3) of this section at all times.

(3) You must maintain the oxygen level such that the 30-day rolling average that is established as the operating limit for oxygen is not below the lowest hourly average oxygen concentration measured during the most recent CO performance test.

(4) You must calculate and record a 30-day rolling average oxygen concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 of Appendix A–7 of this part.

(x) For energy recovery units with annual average heat input rates greater than or equal to 250 MMBtu/hour and waste-burning kilns, you must install, calibrate, maintain, and operate a PM CPMS and record the output of the system as specified in paragraphs (x)(1) through (8) of this section. For other energy recovery units, you may elect to use PM CPMS operated in accordance with this section. PM CPMS are suitable in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure).

(1) Install, calibrate, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 60.2710(l) and (x)(1)(i) through (iii) of this section.

(i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation of the exhaust gas or representative sample. The reportable

measurement output from the PM CPMS must be expressed as milliamps.

(ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.

(iii) The PM CPMS must be capable of detecting and responding to particulate matter concentrations of no greater than 0.5 mg/actual cubic meter.

(2) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, you must adjust the site-specific operating limit in accordance with the results of the performance test according to the procedures specified in § 60.2675.

(3) Collect PM CPMS hourly average output data for all energy recovery unit or waste-burning kiln operating hours. Express the PM CPMS output as milliamps.

(4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output collected during all energy recovery unit or waste-burning kiln operating hours data (milliamps).

(5) You must collect data using the PM CPMS at all times the energy recovery unit or waste-burning kiln is operating and at the intervals specified in paragraph (x)(1)(ii) of this section, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), and any scheduled maintenance as defined in your site-specific monitoring plan.

(6) You must use all the data collected during all energy recovery unit or waste-burning kiln operating hours in assessing the compliance with your operating limit except:

(i) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or quality control activities conducted during monitoring system malfunctions are not used in calculations (report any such periods in your annual deviation report);

(ii) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or quality control activities conducted during out-of-control periods are not used in calculations (report emissions or operating levels and report any such periods in your annual deviation report);

(iii) Any PM CPMS data recorded during periods of CEMS data during startup and shutdown, as defined in this subpart.

(7) You must record and make available upon request results of PM CPMS system performance audits, as well as the dates and duration of periods from when the PM CPMS is out of control until completion of the corrective actions necessary to return the PM CPMS to operation consistent with your site-specific monitoring plan.

(8) For any deviation of the 30-day rolling average PM CPMS average value from the established operating parameter limit, you must:

(i) Within 48 hours of the deviation, visually inspect the air pollution control device;

(ii) If inspection of the air pollution control device identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(iii) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify. Within 45 days of the deviation, you must re-establish the CPMS operating limit. You are not required to conduct additional testing for any deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.

(iv) PM CPMS deviations leading to more than four required performance tests in a 12-month process operating

period (rolling monthly) constitute a violation of this subpart.

[76 FR 15773, Mar. 21, 2011, as amended at 78 FR 9198, Feb. 7, 2013]

§ 60.2715 By what date must I conduct the annual performance test?

You must conduct annual performance tests between 11 and 13 months of the previous performance test.

[76 FR 15777, Mar. 21, 2011]

§ 60.2716 By what date must I conduct the annual air pollution control device inspection?

On an annual basis (no more than 12 months following the previous annual air pollution control device inspection), you must complete the air pollution control device inspection as described in § 60.2706.

[76 FR 15777, Mar. 21, 2011]

§ 60.2720 May I conduct performance testing less often?

(a) You must conduct annual performance tests according to the schedule specified in § 60.2715, with the following exceptions:

(1) You may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward, as specified in § 60.2725. The Administrator may request a repeat performance test at any time.

(2) You must repeat the performance test within 60 days of a process change, as defined in § 60.2875.

(3) If the initial or any subsequent performance test for any pollutant in table 2 or tables 6 through 9 of this subpart, as applicable, demonstrates that the emission level for the pollutant is no greater than the emission level specified in paragraph (a)(3)(i) or (a)(3)(ii) of this section, as applicable, and you are not required to conduct a performance test for the pollutant in response to a request by the Administrator in paragraph (a)(1) of this section or a process change in paragraph (a)(2) of this section, you may elect to skip conducting a performance test for the pollutant for the next 2 years. You must conduct a performance test for the pollutant during the third year and no more than 37 months following the previous performance test for the pollutant. For cadmium and lead, both cadmium and lead must be emitted at emission levels no greater than their respective emission levels specified in paragraph (a)(3)(i) of this section for you to qualify for less frequent testing under this paragraph.

(i) For particulate matter, hydrogen chloride, mercury, carbon monoxide, nitrogen oxides, sulfur dioxide, cadmium, lead, and dioxins/furans, the emission level equal to 75 percent of the applicable emission limit in table 2 or tables 6 through 9 of this subpart, as applicable, to this subpart.

(ii) For fugitive emissions, visible emissions (of combustion ash from the ash conveying system) for 2 percent of the time during each of the three 1-hour observation periods.

(4) If you are conducting less frequent testing for a pollutant as provided in paragraph (a)(3) of this section and a subsequent performance test for the pollutant indicates that your CISWI unit does not meet the emission level specified in paragraph (a)(3)(i) or (a)(3)(ii) of this section, as applicable, you must conduct annual performance tests for the pollutant according to the schedule specified in paragraph (a) of this section until you qualify for less frequent testing for the pollutant as specified in paragraph (a)(3) of this section.

(b) [Reserved]

[76 FR 15777, Mar. 21, 2011, as amended at 78 FR 9201, Feb. 7, 2013]

§ 60.2725 May I conduct a repeat performance test to establish new operating limits?

(a) Yes. You may conduct a repeat performance test at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.

(b) You must repeat the performance test if your feed stream is different than the feed streams used during any performance test used to demonstrate compliance.

MODEL RULE—MONITORING

§ 60.2730 What monitoring equipment must I install and what parameters must I monitor?

(a) If you are using a wet scrubber to comply with the emission limitation under § 60.2670, you must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in table 3 of this subpart. These devices (or methods) must measure and record the values for these operating parameters at the frequencies indicated in table 3 of this subpart at all times except as specified in § 60.2735(a).

(b) If you use a fabric filter to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (b)(1) through (8) of this section.

(1) You must install and operate a bag leak detection system for each exhaust stack of the fabric filter.

(2) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(6) The bag leak detection system must be equipped with an alarm system that will alert automatically an operator when an increase in relative particulate matter emission over a preset level is detected. The alarm must be located where it is observed easily by plant operating personnel.

(7) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) If you are using something other than a wet scrubber, activated carbon, selective non-catalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations under § 60.2670, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in § 60.2680.

(d) If you use activated carbon injection to comply with the emission limitations in this subpart, you must measure the minimum sorbent flow rate once per hour.

(e) If you use selective noncatalytic reduction to comply with the emission limitations, you must complete the following:

(1) Following the date on which the initial performance test is completed or is required to be completed under § 60.2690, whichever date comes first, ensure that the affected facility does not operate above the maximum charge rate, or below the minimum secondary chamber temperature (if applicable to your CISWI unit) or the minimum reagent flow rate measured as 3-hour block averages at all times.

(2) Operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature and below the minimum reagent flow rate simultaneously constitute a violation of the nitrogen oxides emissions limit.

(f) If you use an electrostatic precipitator to comply with the emission limits of this subpart, you must monitor the secondary power to the electrostatic precipitator collection plates and maintain the 3-hour block averages at or above the operating limits established during the mercury or particulate matter performance test.

(g) For waste-burning kilns not equipped with a wet scrubber or dry scrubber, in place of hydrogen chloride

testing with EPA Method 321 at 40 CFR part 63, appendix A, an owner or operator must install, calibrate, maintain, and operate a CEMS for monitoring hydrogen chloride emissions discharged to the atmosphere and record the output of the system. To demonstrate continuous compliance with the hydrogen chloride emissions limit for units other than waste-burning kilns not equipped with a wet scrubber or dry scrubber, a facility may substitute use of a hydrogen chloride CEMS for conducting the hydrogen chloride annual performance test, monitoring the minimum hydrogen chloride sorbent flow rate, monitoring the minimum scrubber liquor pH.

(h) To demonstrate continuous compliance with the particulate matter emissions limit, a facility may substitute use of a particulate matter CEMS for conducting the particulate matter annual performance test and other CMS monitoring for PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure).

(i) To demonstrate continuous compliance with the dioxin/furan emissions limit, a facility may substitute use of a continuous automated sampling system for the dioxin/furan annual performance test. You must record the output of the system and analyze the sample according to EPA Method 23 at 40 CFR part 60, appendix A–7. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to dioxin/furan from continuous monitors is published in the FEDERAL REGISTER. The owner or operator who elects to continuously sample dioxin/furan emissions instead of sampling and testing using EPA Method 23 at 40 CFR part 60, appendix A–7 must install, calibrate, maintain and operate a continuous automated sampling system and must comply with the requirements specified in § 60.58b(p) and (q). A facility may substitute continuous dioxin/furan monitoring for the minimum sorbent flow rate, if activated carbon sorbent injection is used solely for compliance with the dioxin/furan emission limit.

(j) To demonstrate continuous compliance with the mercury emissions limit, a facility may substitute use of a continuous automated sampling system for the mercury annual performance test. You must record the output of the system and analyze the sample at set intervals using any suitable determinative technique that can meet performance specification 12B criteria. This option to use a continuous automated sampling system takes effect on the date a final performance specification applicable to mercury from monitors is published in the FEDERAL REGISTER. The owner or operator who elects to continuously sample mercury emissions instead of sampling and testing using EPA Method 29 or 30B at 40 CFR part 60, appendix A–8, ASTM D6784–02 (Reapproved 2008) (incorporated by reference, see § 60.17), or an approved alternative method for measuring mercury emissions, must install, calibrate, maintain and operate a continuous automated sampling system and must comply with the requirements specified in § 60.58b(p) and (q). A facility may substitute continuous mercury monitoring for the minimum sorbent flow rate, if activated carbon sorbent injection is used solely for compliance with the mercury emission limit.

(k) To demonstrate continuous compliance with the nitrogen oxides emissions limit, a facility may substitute use of a continuous emissions monitoring system for the nitrogen oxides annual performance test to demonstrate compliance with the nitrogen oxides emissions limits.

(1) Install, calibrate, maintain and operate a continuous emission monitoring system for measuring nitrogen oxides emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 2 of appendix B of this part, the quality assurance procedure 1 of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation and operation of the continuous emission monitoring system.

(2) Following the date that the initial performance test for nitrogen oxides is completed or is required to be completed under § 60.2690, compliance with the emission limit for nitrogen oxides required under § 60.52b(d) must be determined based on the 30-day rolling

average of the hourly emission concentrations using continuous emission monitoring system outlet data. The 1-hour arithmetic averages must be expressed in parts per million by volume (dry basis) and used to calculate the 30-day rolling average concentrations. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(l) To demonstrate continuous compliance with the sulfur dioxide emissions limit, a facility may substitute use of a continuous automated sampling system for the sulfur dioxide annual performance test to demonstrate compliance with the sulfur dioxide emissions limits.

(1) Install, calibrate, maintain and operate a CEMS for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 2 of appendix B of this part, the quality assurance requirements of procedure 1 of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation and operation of the CEMS.

(2) Following the date that the initial performance test for sulfur dioxide is completed or is required to be completed under § 60.2690, compliance with the sulfur dioxide emission limit may be determined based on the 30-day rolling average of the hourly arithmetic average emission concentrations using CEMS outlet data. The 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average emission concentrations. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(m) For energy recovery units that do not use a wet scrubber, fabric filter with bag leak detection system, or particulate matter CEMS, you must install, operate, certify and maintain a continuous opacity monitoring system according to the procedures in paragraphs (m)(1) through (5) of this section by the compliance date specified in § 60.2670. Energy recovery units that use a particulate matter CEMS to demonstrate initial and continuing compliance according to the procedures in § 60.2730(n) are not required to install a continuous opacity monitoring system and must perform the annual performance tests for opacity consistent with § 60.2710(f).

(1) Install, operate and maintain each continuous opacity monitoring system according to performance specification 1 at 40 CFR part 60, appendix B.

(2) Conduct a performance evaluation of each continuous opacity monitoring system according to the requirements in § 60.13 and according to performance specification 1 at 40 CFR part 60, appendix B.

(3) As specified in § 60.13(e)(1), each continuous opacity monitoring system must 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.

(4) Reduce the continuous opacity monitoring system data as specified in § 60.13(h)(1).

(5) Determine and record all the 6-minute averages (and 1-hour block averages as applicable) collected.

(n) For coal and liquid/gas energy recovery units, incinerators, and small remote incinerators, an owner or operator may elect to install, calibrate, maintain and operate a CEMS for monitoring particulate matter emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who continuously monitors particulate matter emissions instead of conducting performance testing using EPA Method 5 at 40 CFR part 60, appendix A–3 or, as applicable, monitor with a particulate matter CPMS according to paragraph (r) of this section, must install, calibrate, maintain and operate a CEMS and must comply with the requirements specified in paragraphs (n)(1) through (13) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor must be installed, evaluated and operated in accordance with the requirements of performance specification 11 of appendix B of this

part and quality assurance requirements of procedure 2 of appendix F of this part and § 60.13.

(4) The initial performance evaluation must be completed no later than 180 days after the final compliance date for meeting the amended emission limitations, as specified under § 60.2690 or within 180 days of notification to the Administrator of use of the continuous monitoring system if the owner or operator was previously determining compliance by Method 5 at 40 CFR part 60, appendix A–3 performance tests, whichever is later.

(5) The owner or operator of an affected facility may request that compliance with the particulate matter emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility must be established according to the procedures and methods specified in § 60.2710(s)(5)(i) through (s)(5)(iv).

(6) The owner or operator of an affected facility must conduct an initial performance test for particulate matter emissions as required under § 60.2690. Compliance with the particulate matter emission limit, if PM CEMS are elected for demonstrating compliance, must be determined by using the CEMS specified in paragraph (n) of this section to measure particulate matter. You must calculate a 30-day rolling average of 1-hour arithmetic average emission concentrations, including CEMS data during startup and shutdown, as defined in this subpart, using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, appendix A–7 of this part.

(7) Compliance with the particulate matter emission limit must be determined based on the 30-day rolling average calculated using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 at 40 CFR part 60, Appendix A–7 of the part from the 1-hour arithmetic average of the CEMS outlet data.

(8) At a minimum, valid continuous monitoring system hourly averages must be obtained as specified § 60.2735.

(9) The 1-hour arithmetic averages required under paragraph (n)(7) of this section must be expressed in milligrams per dry standard cubic meter corrected to 7 percent oxygen (or carbon dioxide)(dry basis) and must be used to calculate the 30-day rolling average emission concentrations. CEMS data during startup and shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(10) All valid CEMS data must be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (n)(8) of this section are not met.

(11) The CEMS must be operated according to performance specification 11 in appendix B of this part.

(12) During each relative accuracy test run of the CEMS required by performance specification 11 in appendix B of this part, particulate matter and oxygen (or carbon dioxide) data must be collected concurrently (or within a 30- to 60-minute period) by both the CEMS and the following test methods.

(i) For particulate matter, EPA Reference Method 5 at 40 CFR part 60, appendix A–3 must be used.

(ii) For oxygen (or carbon dioxide), EPA Reference Method 3A or 3B at 40 CFR part 60, appendix A–2, as applicable, must be used.

(13) Quarterly accuracy determinations and daily calibration drift tests must be performed in accordance with procedure 2 in appendix F of this part.

(o) To demonstrate continuous compliance with the carbon monoxide emissions limit, a facility may substitute use of a continuous automated sampling system for the carbon monoxide annual performance test to demonstrate compliance with the carbon monoxide emissions limits.

(1) Install, calibrate, maintain, and operate a CEMS for measuring carbon monoxide emissions discharged to the atmosphere and record the output of the system. The requirements under performance specification 4B of appendix B of this part, the quality assurance procedure 1 of appendix F of this part and the procedures under § 60.13 must be followed for installation, evaluation, and operation of the CEMS.

(2) Following the date that the initial performance test for carbon monoxide is completed or is required to be completed under § 60.2690, compliance with the carbon monoxide emission limit may be determined based on the 30-day rolling average of the hourly arithmetic average emission concentrations, including CEMS data during startup and shutdown as defined in this subpart, using CEMS outlet data. Except for CEMS data during startup and shutdown, as defined in this subpart, the 1-hour arithmetic averages must be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 30-day rolling average emission concentrations. CEMS data collected during startup or shutdown, as defined in this subpart, are not corrected to 7 percent oxygen, and are measured at stack oxygen content. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(p) The owner/operator of an affected source with a bypass stack shall install, calibrate (to manufacturers' specifications), maintain and operate a device or method for measuring the use of the bypass stack including date, time and duration.

(q) For energy recovery units with a heat input capacity of 100 MMBtu per hour or greater that do not use a carbon monoxide continuous emission monitoring system, you must install, operate and maintain the continuous oxygen monitoring system according to the procedures in paragraphs (q)(1) through (4) of this section by the compliance date specified in table 1 of this subpart. The oxygen level shall be monitored at the outlet of the energy recovery unit.

(1) Each monitor must be installed, operated, and maintained according to the applicable procedures under performance specification 3 of appendix B of this part, the quality assurance procedure 1 of appendix F of this part, the procedures under § 60.13 and according to the site-specific monitoring plan developed according to paragraph (l) of this section.

(2) During each relative accuracy test run of the continuous emission monitoring system required by performance specification 3 of appendix B of this part, oxygen data must be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitor and the test methods specified in paragraphs (w)(3) of this section.

(3) For oxygen, EPA Reference Method 3A or 3B, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, *see* § 60.17), as applicable, must be used.

(4) You must calculate and record a 30-day rolling average oxygen concentration using Equation 19–19 in section 12.4.1 of EPA Reference Method 19 of Appendix A–7 of this part. The 1-hour arithmetic averages must be calculated using the data points required under § 60.13(e)(2).

(r) For energy recovery units with annual average heat input rates greater than or equal to 250 MMBtu/hour and waste-burning kilns, you must install, calibrate, maintain, and operate a PM CPMS and record the output of the system as specified in paragraphs (r)(1) through (8) of this section. For other energy recovery units, you may elect to use PM CPMS operated in accordance with this section. PM CPMS are suitable in lieu of using other CMS for monitoring PM compliance (e.g., bag leak detectors, ESP secondary power, PM scrubber pressure).

(1) Install, calibrate, operate, and maintain your PM CPMS according to the procedures in your approved site-specific monitoring plan developed in accordance with § 60.2710(l) and (r)(1)(i) through (iii) of this section.

(i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation of the exhaust gas or representative sample. The reportable measurement output from the PM CPMS must be expressed as milliamps.

(ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes.

(iii) The PM CPMS must be capable of detecting and responding to particulate matter concentrations of no greater than 0.5 mg/actual cubic meter.

(2) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, you must adjust the site-specific operating limit in accordance with the results of the performance test according to the procedures specified in § 60.2675.

(3) Collect PM CPMS hourly average output data for all energy recovery unit or waste-burning kiln operating hours. Express the PM CPMS output as milliamps..

(4) Calculate the arithmetic 30-day rolling average of all of the hourly average PM CPMS output collected during all energy recovery unit or waste-burning kiln operating hours data (milliamps).

(5) You must collect data using the PM CPMS at all times the energy recovery unit or waste-burning kiln is operating and at the intervals specified in paragraph (r)(1)(ii) of this section, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), and any scheduled maintenance as defined in your site-specific monitoring plan.

(6) You must use all the data collected during all energy recovery unit or waste-burning kiln operating hours in assessing the compliance with your operating limit except:

(i) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or quality control activities conducted during monitoring system malfunctions are not used in calculations (report any such periods in your annual deviation report);

(ii) Any data collected during periods when the monitoring system is out of control as specified in your site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or quality control activities conducted during out-of-control periods are not used in calculations (report emissions or operating levels and report any such periods in your annual deviation report);

(iii) Any PM CPMS data recorded during periods of CEMS data during startup and shutdown, as defined in this subpart.

(7) You must record and make available upon request results of PM CPMS system performance audits, as well as the dates and duration of periods from when the PM CPMS is out of control until completion of the corrective actions necessary to return the PM CPMS to operation consistent with your site-specific monitoring plan.

(8) For any deviation of the 30-day rolling average PM CPMS average value from the established operating parameter limit, you must:

(i) Within 48 hours of the deviation, visually inspect the air pollution control device;

(ii) If inspection of the air pollution control device identifies the cause of the deviation, take corrective action as soon as possible and return the PM CPMS measurement to within the established value; and

(iii) Within 30 days of the deviation or at the time of the annual compliance test, whichever comes first, conduct a PM emissions compliance test to determine compliance with the PM emissions limit and to verify. Within 45 days of the deviation, you must re-establish the CPMS operating limit. You are not required to conduct additional testing for any deviations that occur between the time of the original deviation and the PM emissions compliance test required under this paragraph.

(iv) PM CPMS deviations leading to more than four required performance tests in a 12-month process operating period (rolling monthly) constitute a violation of this subpart.

(s) If you use a dry scrubber to comply with the emission limits of this subpart, you must monitor the injection rate of each sorbent and maintain the 3-hour block averages at or above the operating limits established during the hydrogen chloride performance test.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15777, Mar. 21, 2011; 78 FR 9201, Feb. 7, 2013]

EDITORIAL NOTE: At 78 FR 9201, Feb. 7, 2013, § 60.2730 was amended by revising (o)(9); however, the amendment could not be incorporated because (o)(9) doesn't exist.

§ 60.2735 Is there a minimum amount of monitoring data I must obtain?

For each continuous monitoring system required or optionally allowed under § 60.2730, you must monitor and collect data according to this section:

(a) You must operate the monitoring system and collect data at all required intervals at all times compliance is required except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods (as specified in § 60.2770(o) of this part), and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to effect monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.

(b) You may not use data recorded during the monitoring system malfunctions, repairs associated with monitoring system malfunctions or out-of control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(c) Except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments, failure to collect required data is a deviation of the monitoring requirements.

[76 FR 15780, Mar. 21, 2011]

MODEL RULE—RECORDKEEPING AND REPORTING

§ 60.2740 What records must I keep?

You must maintain the items (as applicable) as specified in paragraphs (a), (b), and (e) through (w) of this section for a period of at least 5 years:

(a) Calendar date of each record.

(b) Records of the data described in paragraphs (b)(1) through (6) of this section:

(1) The CISWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet every 15 minutes of operation, as applicable.

(3) Pressure drop across the wet scrubber system every 15 minutes of operation or amperage to the wet scrubber every 15 minutes of operation, as applicable.

(4) Liquor pH as introduced to the wet scrubber every 15 minutes of operation, as applicable.

(5) For affected CISWI units that establish operating limits for controls other than wet scrubbers under § 60.2675(d) through (g) or § 60.2680, you must maintain data collected for all operating parameters used to determine compliance with the operating limits. For energy recovery units using activated carbon injection or a dry scrubber, you must also maintain records of the load fraction and corresponding sorbent injection rate records.

(6) If a fabric filter is used to comply with the emission limitations, you must record the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in § 60.2675(c).

(c)–(d) [Reserved]

(e) Identification of calendar dates and times for which data show a deviation from the operating limits in table 3 of this subpart or a deviation

from other operating limits established under § 60.2675(d) through (g) or § 60.2680 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

(f) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations.

(g) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2660(a) as required by § 60.2660(b), including the date of the initial review and all subsequent annual reviews.

(h) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2635, met the criteria for qualification under § 60.2645, and maintained or renewed their qualification under § 60.2650 or § 60.2655. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(i) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

(j) Records of calibration of any monitoring devices as required under § 60.2730.

(k) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

(l) The information listed in § 60.2660(a).

(m) On a daily basis, keep a log of the quantity of waste burned and the types of waste burned (always required).

(n) Maintain records of the annual air pollution control device inspections that are required for each CISWI unit subject to the emissions limits in table 2 of this subpart or tables 6 through 9 of this subpart, any required maintenance and any repairs not completed within 10 days of an inspection or the timeframe established by the state regulatory agency.

(o) For continuously monitored pollutants or parameters, you must document and keep a record of the following parameters measured using continuous monitoring systems.

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions. You must indicate which data are CEMS data during startup and shutdown.

(3) All 1-hour average concentrations of nitrogen oxides emissions. You must indicate which data are CEMS data during startup and shutdown.

(4) All 1-hour average concentrations of carbon monoxide emissions. You must indicate which data are CEMS data during startup and shutdown.

(5) All 1-hour average concentrations of particulate matter emissions. You must indicate which data are CEMS data during startup and shutdown.

(6) All 1-hour average concentrations of mercury emissions. You must indicate which data are CEMS data during startup and shutdown.

(7) All 1-hour average concentrations of hydrogen chloride emissions. You must indicate which data are CEMS data during startup and shutdown.

(8) All 1-hour average percent oxygen concentrations.

(9) All 1-hour average PM CPMS readings or particulate matter CEMS outputs.

(p) Records indicating use of the bypass stack, including dates, times and durations.

(q) If you choose to stack test less frequently than annually, consistent with § 60.2720(a) through (c), you must keep annual records that document that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.

(r) Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.

(s) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(t) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(u) For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to § 241.3(b)(1), you must keep a record which documents how the secondary material meets each of the legitimacy criteria under § 241.3(d)(1). If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to § 241.3(b)(4), you must keep records as to how the operations that produced the fuel satisfies the definition of processing in § 241.2 and each of the legitimacy criteria in § 241.3(d)(1) of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under § 241.3(c), you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per § 241.4, you must keep records documenting that the material is a listed non-waste under § 241.4(a).

(v) Records of the criteria used to establish that the unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)) and that the waste material the unit is proposed to burn is homogeneous.

(w) Records of the criteria used to establish that the unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)) and that the waste material the unit is proposed to burn is homogeneous.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15780, Mar. 21, 2011; 78 FR 9204, Feb. 7, 2013]

§ 60.2745 Where and in what format must I keep my records?

All records must be available onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§ 60.2750 What reports must I submit?

See table 5 of this subpart for a summary of the reporting requirements.

§ 60.2755 When must I submit my waste management plan?

You must submit the waste management plan no later than the date specified in table 1 of this subpart for submittal of the final control plan.

§ 60.2760 What information must I submit following my initial performance test?

You must submit the information specified in paragraphs (a) through (c) of this section no later than 60 days following the initial performance test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial performance test results obtained under § 60.2700, as applicable.

(b) The values for the site-specific operating limits established in § 60.2675 or § 60.2680.

(c) If you are using a fabric filter to comply with the emission limitations, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required by § 60.2730(b).

§ 60.2765 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in § 60.2760. You must submit subsequent reports no more than 12 months following the previous report. (If the unit is subject to permitting requirements under title V of the Clean Air Act, you may be required by the permit to submit these reports more frequently.)

§ 60.2770 What information must I include in my annual report?

The annual report required under § 60.2765 must include the ten items listed in paragraphs (a) through (j) of this section. If you have a deviation from the operating limits or the emission limitations, you must also submit deviation reports as specified in §§ 60.2775, 60.2780, and 60.2785.

(a) Company name and address.

(b) Statement by a responsible official, with that official's name, title,

and signature, certifying the accuracy of the content of the report.

(c) Date of report and beginning and ending dates of the reporting period.

(d) The values for the operating limits established pursuant to § 60.2675 or § 60.2680.

(e) If no deviation from any emission limitation or operating limit that applies to you has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period.

(f) The highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported.

(g) Information recorded under § 60.2740(b)(6) and (c) through (e) for the calendar year being reported.

(h) If a performance test was conducted during the reporting period, the results of that test.

(i) If you met the requirements of § 60.2720(a) or (b), and did not conduct a performance test during the reporting period, you must state that you met the requirements of § 60.2720(a) or (b), and, therefore, you were not required to conduct a performance test during the reporting period.

(j) Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours, but less than 2 weeks.

(k) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction that occurred during the reporting period and that caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 60.11(d), including actions taken to correct a malfunction.

(l) For each deviation from an emission or operating limitation that occurs for a CISWI unit for which you are not using a CMS to comply with the emission or operating limitations in this subpart, the annual report must contain the following information.

(1) The total operating time of the CISWI unit at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(m) If there were periods during which the continuous monitoring system, including the CEMS, was out of control as specified in paragraph (o) of this section, the annual report must contain the following information for each deviation from an emission or operating limitation occurring for a CISWI unit for which you are using a continuous monitoring system to comply with the emission and operating limitations in this subpart.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each continuous monitoring system was out-of-control, including start and end dates and hours and descriptions of corrective actions taken.

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of continuous monitoring system downtime during the reporting period, and the total duration of continuous monitoring system downtime as a percent of the total operating time of the CISWI unit at which the continuous monitoring system downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant that was monitored at the CISWI unit.

(9) A brief description of the CISWI unit.

(10) A brief description of the continuous monitoring system.

(11) The date of the latest continuous monitoring system certification or audit.

(12) A description of any changes in continuous monitoring system, processes, or controls since the last reporting period.

(n) If there were periods during which the continuous monitoring system, including the CEMS, was not out of control as specified in paragraph (o) of this section, a statement that there were not periods during which the continuous monitoring system was out of control during the reporting period.

(o) A continuous monitoring system is out of control if any of the following occur.

(1) The zero (low-level), mid-level (if applicable), or high-level calibration drift exceeds two times the applicable calibration drift specification in the applicable performance specification or in the relevant standard.

(2) The continuous monitoring system fails a performance test audit (*e.g.*, cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit.

(3) The continuous opacity monitoring system calibration drift exceeds two times the limit in the applicable performance specification in the relevant standard.

(p) For energy recovery units, include the annual heat input and average annual heat input rate of all fuels being burned in the unit to verify which subcategory of energy recovery unit applies.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15781, Mar. 21, 2011; 78 FR 9204, Feb. 7, 2013]

§ 60.2775 What else must I report if I have a deviation from the operating limits or the emission limitations?

(a) You must submit a deviation report if any recorded 3-hour average parameter level is above the maximum operating limit or below the minimum operating limit established under this subpart, if the bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period, or if a performance test was conducted that deviated from any emission limitation.

(b) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

§ 60.2780 What must I include in the deviation report?

In each report required under § 60.2775, for any pollutant or parameter that deviated from the emission limitations or operating limits specified in this subpart, include the six items described in paragraphs (a) through (f) of this section.

(a) The calendar dates and times your unit deviated from the emission limitations or operating limit requirements.

(b) The averaged and recorded data for those dates.

(c) Durations and causes of the following:

(1) Each deviation from emission limitations or operating limits and your corrective actions.

(2) Bypass events and your corrective actions.

(d) A copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15781, Mar. 21, 2011]

§ 60.2785 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?

(a) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (a)(1) and (2) of this section.

(1) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (a)(1)(i) through (iii) of this section.

(i) A statement of what caused the deviation.

(ii) A description of what you are doing to ensure that a qualified operator is accessible.

(iii) The date when you anticipate that a qualified operator will be available.

(2) Submit a status report to the Administrator every 4 weeks that includes the three items in paragraphs (a)(2)(i) through (iii) of this section.

(i) A description of what you are doing to ensure that a qualified operator is accessible.

(ii) The date when you anticipate that a qualified operator will be accessible.

(iii) Request approval from the Administrator to continue operation of the CISWI unit.

(b) If your unit was shut down by the Administrator, under the provisions of § 60.2665(b)(2), due to a failure to provide an accessible qualified operator, you must notify the Administrator that you are resuming operation once a qualified operator is accessible.

§ 60.2790 Are there any other notifications or reports that I must submit?

(a) Yes. You must submit notifications as provided by § 60.7.

(b) If you cease combusting solid waste but continue to operate, you must provide 30 days prior notice of the effective date of the waste-to-fuel switch, consistent with § 60.2710(a). The notification must identify:

(1) The name of the owner or operator of the CISWI unit, the location of the source, the emissions unit(s) that will cease burning solid waste, and the date of the notice;

(2) The currently applicable subcategory under this subpart, and any 40 CFR part 63 subpart and subcategory that will be applicable after you cease combusting solid waste;

(3) The fuel(s), non-waste material(s) and solid waste(s) the CISWI unit is currently combusting and has combusted over the past 6 months, and the fuel(s) or non-waste materials the unit will commence combusting;

(4) The date on which you became subject to the currently applicable emission limits;

(5) The date upon which you will cease combusting solid waste, and the date (if different) that you intend for any new requirements to become applicable (i.e., the effective date of the waste-to-fuel switch), consistent with paragraphs (b)(2) and (3)of this section.

[76 FR 15781, Mar. 21, 2011]

§ 60.2795 In what form can I submit my reports?

(a) Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

(b) Submit results of performance tests and CEMS performance evaluation tests as follows.

(1) Within 60 days after the date of completing each performance test as required by this subpart, you must submit the results of the performance tests required by this subpart to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX)(*www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk, flash drive, or other commonly used electronic storage media to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test in paper submissions to the Administrator.

(2) Within 60 days after the date of completing each CEMS performance evaluation test, as defined in this subpart and required by this subpart, you must submit the relative accuracy test audit (RATA) data electronically into EPA's Central Data Exchange by using CEDRI as mentioned in paragraph (b)(1) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator shall submit the results of the performance evaluation in paper submissions to the Administrator.

[78 FR 9205, Feb. 7, 2013]

§ 60.2800 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

MODEL RULE—TITLE V OPERATING PERMITS

§ 60.2805 Am I required to apply for and obtain a Title V operating permit for my unit?

Yes. Each CISWI unit and air curtain incinerator subject to standards under this subpart must operate pursuant to a permit issued under Clean Air Act sections 129(e) and Title V.

[76 FR 15782, Mar. 21, 2011]

MODEL RULE—AIR CURTAIN INCINERATORS

§ 60.2810 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2810 through 60.2870).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.2815 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of State plan approval, you must meet the two increments of progress specified in paragraphs (a) and (b) of this section.

(a) Submit a final control plan.

(b) Achieve final compliance.

§ 60.2820 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress.

§ 60.2825 What must I include in the notifications of achievement of increments of progress?

Your notification of achievement of increments of progress must include the three items described in paragraphs (a) through (c) of this section.

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with each increment of progress (see § 60.2840).

(c) Signature of the owner or operator of the incinerator.

§ 60.2830 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§ 60.2835 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in table 1 of this subpart. You must inform the

Administrator that you did not meet the increment, and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§ 60.2840 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must satisfy the two requirements specified in paragraphs (a) and (b) of this section.

(a) Submit the final control plan, including a description of any devices for air pollution control and any process changes that you will use to comply with the emission limitations and other requirements of this subpart.

(b) Maintain an onsite copy of the final control plan.

§ 60.2845 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected incinerator is brought online, all necessary process changes and air pollution control devices would operate as designed.

§ 60.2850 What must I do if I close my air curtain incinerator and then restart it?

(a) If you close your incinerator but will reopen it prior to the final compliance date in your State plan, you must meet the increments of progress specified in § 60.2815.

(b) If you close your incinerator but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limitations on the date your incinerator restarts operation.

§ 60.2855 What must I do if I plan to permanently close my air curtain incinerator and not restart it?

If you plan to close your incinerator rather than comply with the State plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

§ 60.2860 What are the emission limitations for air curtain incinerators?

After the date the initial stack test is required or completed (whichever is earlier), you must meet the limitations in paragraphs (a) and (b) of this section.

(a) Maintain opacity to less than or equal to 10 percent opacity (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values), except as described in paragraph (b) of this section.

(b) Maintain opacity to less than or equal to 35 percent opacity (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) during the startup period that is within the first 30 minutes of operation.

[76 FR 15782, Mar. 21, 2011]

§ 60.2865 How must I monitor opacity for air curtain incinerators?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

(b) Conduct an initial test for opacity as specified in § 60.8 no later than 180 days after your final compliance date.

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

§ 60.2870 What are the recordkeeping and reporting requirements for air curtain incinerators?

(a) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.

(b) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(c) Submit an initial report no later than 60 days following the initial opacity test that includes the information specified in paragraphs (c) (1) and (2) of this section.

(1) The types of materials you plan to combust in your air curtain incinerator.

(2) The results (as determined by the average of three 1-hour blocks consisting of ten 6-minute average opacity values) of the initial opacity tests.

(d) Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date and keep a copy onsite for a period of 5 years.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15782, Mar. 21, 2011]

MODEL RULE—DEFINITIONS

§ 60.2875 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subparts A and B of this part.

30-day rolling average means the arithmetic mean of the previous 720 hours of valid operating data. Valid data excludes periods when this unit is not operating. The 720 hours should be consecutive, but not necessarily continuous if operations are intermittent.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Agricultural waste means vegetative agricultural materials such as nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

Annual heat input means the heat input for the 12 months preceding the compliance demonstration.

Auxiliary fuel means natural gas, liquified petroleum gas, fuel oil, or diesel fuel.

Average annual heat input rate means annual heat input divided by the hours of operation for the 12 months preceding the compliance demonstration.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Burn-off oven means any rack reclamation unit, part reclamation unit, or drum reclamation unit. A burn-off oven is not an incinerator, waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

CEMS data during startup and shutdown means the following:

(1) For incinerators, small remote incinerators, and energy recovery units: CEMS data collected during the first hours of operation of a CISWI unit startup from a cold start until waste is fed into the unit and the hours of operation following the cessation of waste material being fed to the CISWI unit during a unit shutdown. For each startup event, the length of time that CEMS data may be claimed as being CEMS data during startup must be 48 operating hours or less. For each shutdown event, the length of time that CEMS data may be claimed as being CEMS data during shutdown must be 24 operating hours or less.

(2) For waste-burning kilns: CEMS data collected during the periods of kiln operation that do not include normal operations. Startup begins when the kiln's induced fan is turned on and continues until continuous feed is introduced into the kiln, at which time the kiln is in normal operating mode. Shutdown begins when feed to the kiln is halted.

Chemical recovery unit means combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. A chemical recovery unit is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart. The following seven types of units are considered chemical recovery units:

(1) Units burning only pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.

(2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.

(3) Units burning only wood or coal feedstock for the production of charcoal.

(4) Units burning only manufacturing byproduct streams/residue containing catalyst metals that are reclaimed and reused as catalysts or used to produce commercial grade catalysts.

(5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.

(6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or other gases for use in other manufacturing processes.

(7) Units burning only photographic film to recover silver.

Chemical recovery unit means combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. The following seven types of units are considered chemical recovery units:

(1) Units burning only pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.

(2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.

(3) Units burning only wood or coal feedstock for the production of charcoal.

(4) Units burning only manufacturing byproduct streams/residue containing catalyst metals that are reclaimed and reused as catalysts or used to produce commercial grade catalysts.

(5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.

(6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or other gases for use in other manufacturing processes.

(7) Units burning only photographic film to recover silver.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Commercial and industrial solid waste incineration (CISWI) unit means any distinct operating unit of any commercial or industrial facility that combusts, or has combusted in the preceding 6 months, any solid waste as that term is defined in 40 CFR part 241. If the operating unit burns materials other than traditional fuels as defined in §241.2 that have been discarded, and you do not keep and produce records as required by §60.2740(u), the operating unit is a CISWI unit. While not all CISWI units will include all of the following components, a CISWI unit includes, but is not limited to, the solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the solid waste hopper (if applicable)

and extends through two areas: The combustion unit flue gas system, which ends immediately after the last combustion chamber or after the waste heat recovery equipment, if any; and the combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. The CISWI unit includes all ash handling systems connected to the bottom ash handling system.

Contained gaseous material means gases that are in a container when that container is combusted.

Continuous emission monitoring system (CEMS) means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart, used to sample, condition (if applicable), analyze, and provide a record of emissions.

Continuous monitoring system (CMS) means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters. A particulate matter continuous parameter monitoring system (PM CPMS) is a type of CMS.

Cyclonic burn barrel means a combustion device for waste materials that is attached to a 55 gallon, open-head drum. The device consists of a lid, which fits onto and encloses the drum, and a blower that forces combustion air into the drum in a cyclonic manner to enhance the mixing of waste material and air. A cyclonic burn barrel is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements.

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

Dioxins/furans means tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Discard means, for purposes of this subpart and 40 CFR part 60, subpart DDDD, only, burned in an incineration unit without energy recovery.

Drum reclamation unit means a unit that burns residues out of drums (e.g., 55 gallon drums) so that the drums can be reused.

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system.

Energy recovery means the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating.

Energy recovery unit means a combustion unit combusting solid waste (as that term is defined by the Administrator in 40 CFR part 241) for energy recovery. Energy recovery units include units that would be considered boilers and process heaters if they did not combust solid waste.

Energy recovery unit designed to burn biomass (Biomass) means an energy recovery unit that burns solid waste, biomass, and non-coal solid materials but less than 10 percent coal, on a heat input basis on an annual average, either alone or in combination with liquid waste, liquid fuel or gaseous fuels.

Energy recovery unit designed to burn liquid waste materials and gas (Liquid/gas) means an energy recovery unit that burns a liquid waste with liquid or gaseous fuels not combined with any solid fuel or waste materials.

Energy recovery unit designed to burn solid materials (Solids) includes energy recovery units designed to burn coal and energy recovery units designed to burn biomass

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas

streams through filter media, also known as a baghouse.

Foundry sand thermal reclamation unit means a type of part reclamation unit that removes coatings that are on foundry sand. A foundry sand thermal reclamation unit is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Incinerator means any furnace used in the process of combusting solid waste (as that term is defined by the Administrator in 40 CFR part 241) for the purpose of reducing the volume of the waste by removing combustible matter. Incinerator designs include single chamber and two-chamber.

Kiln means an oven or furnace, including any associated preheater or precalciner devices, used for processing a substance by burning, firing or drying. Kilns include cement kilns that produce clinker by heating limestone and other materials for subsequent production of Portland Cement.

Laboratory analysis unit means units that burn samples of materials for the purpose of chemical or physical analysis. A laboratory analysis unit is not an incinerator, waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Load fraction means the actual heat input of an energy recovery unit divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5).

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable Federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

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.

Minimum voltage or amperage means 90 percent of the lowest test-run average voltage or amperage to the electrostatic precipitator measured during the most recent particulate matter or mercury performance test demonstrating compliance with the applicable emission limits.

Modification or *modified CISWI unit* means a CISWI unit that has been changed later than August 7, 2013, and that meets one of two criteria:

(i) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Municipal solid waste or municipal-type solid waste means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of solid waste is combusted at any time in the CISWI unit.

Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler or process heater flue gas, boiler/process heater, firebox, or other appropriate location. This definition includes oxygen trim systems and certified oxygen CEMS. The source owner or operator is responsible to install, calibrate, maintain, and operate the oxygen analyzer system in accordance with the manufacturer's recommendations.

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device. A typical system consists of a flue gas oxygen and/or carbon monoxide monitor that automatically provides a feedback signal to the combustion air controller.

Part reclamation unit means a unit that burns coatings off parts (e.g., tools, equipment) so that the parts can be reconditioned and reused.

Particulate matter means total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

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.

Process change means any of the following physical or operational changes:

(1) A physical change (maintenance activities excluded) to the CISWI unit which may increase the emission rate of any air pollutant to which a standard applies;

(2) An operational change to the CISWI unit where a new type of nonhazardous secondary material is being combusted;

(3) A physical change (maintenance activities excluded) to the air pollution control devices used to comply with the emission limits for the CISWI unit (e.g., replacing an electrostatic precipitator with a fabric filter);

(4) An operational change to the air pollution control devices used to comply with the emission limits for the affected CISWI unit (e.g., change in the sorbent injection rate used for activated carbon injection).

Rack reclamation unit means a unit that burns the coatings off racks used to hold small items for application of a coating. The unit burns the coating overspray off the rack so the rack can be reused.

Raw mill means a ball or tube mill, vertical roller mill or other size reduction equipment, that is not part of an in-line kiln/raw mill, used to grind feed to the appropriate size. Moisture may be added or removed from the feed during the grinding operation. If the raw mill is used to remove moisture from feed materials, it is also, by definition, a raw material dryer. The raw mill also includes the air separator associated with the raw mill.

Reconstruction means rebuilding a CISWI unit and meeting two criteria:

(1) The reconstruction begins on or after June 1, 2001.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

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 facilities:

(i) The designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the Clean Air Act or the regulations promulgated thereunder are concerned; or

(ii) The designated representative for any other purposes under part 60.

Shutdown means the period of time after all waste has been combusted in the primary chamber.

Small, remote incinerator means an incinerator that combusts solid waste (as that term is defined by the Administrator in 40 CFR part 241) and combusts 3 tons per day or less solid waste and is more than 25 miles driving distance to the nearest municipal solid waste landfill.

Soil treatment unit means a unit that thermally treats petroleum-contaminated soils for the sole purpose of site remediation. A soil treatment unit may be direct-fired or indirect fired. A soil treatment unit is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Solid waste means the term solid waste as defined in 40 CFR 241.2.

Solid waste incineration unit means a distinct operating unit of any facility which combusts any solid waste (as that term is defined by the Administrator in 40 CFR part 241) material from commercial or industrial establishments or the general public (including single and multiple residences, hotels and motels). Such term does not include incinerators or other units required to have a permit under section 3005 of the Solid Waste Disposal Act. The term ''solid waste incineration unit'' does not include:

(1) Materials recovery facilities (including primary or secondary smelters) which combust waste for the primary purpose of recovering metals;

(2) Qualifying small power production facilities, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 769(17)(C)), or qualifying cogeneration facilities, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), which burn homogeneous waste (such as units which burn tires or used oil, but not including refuse-derived fuel) for the production of electric energy or in the case of qualifying cogeneration facilities which burn homogeneous waste for the production of electric energy and steam or forms of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes; or

(3) Air curtain incinerators provided that such incinerators only burn wood wastes, yard wastes and clean lumber and that such air curtain incinerators comply with opacity limitations to be established by the Administrator by rule.

Space heater means a unit that meets the requirements of 40 CFR 279.23. A space heater is not an incinerator, a waste-burning kiln, an energy recovery unit or a small, remote incinerator under this subpart.

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the unit.

Waste-burning kiln means a kiln that is heated, in whole or in part, by combusting solid waste (as the term is defined by the Administrator in 40 CFR part 241). Secondary materials used in Portland cement kilns shall not be deemed to be combusted unless they are introduced into the flame zone in the hot end of the kiln or mixed with the precalciner fuel.

Wet scrubber means an add-on air pollution control device that uses an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include:

(1) Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

(2) Construction, renovation, or demolition wastes.

(3) Clean lumber.

[65 FR 75362, Dec. 1, 2000, as amended at 70 FR 55581, Sept. 22, 2005; 76 FR 15782, Mar. 21, 2011; 78 FR 9205, Feb. 7, 2013]

TABLE 1 TO SUBPART DDDD OF PART 60—MODEL RULE—INCREMENTS OF PROGRESS AND COMPLIANCE SCHEDULES

Comply with these increments of progress	By these dates[a]
Increment 1—Submit final control plan.	(Dates to be specified in state plan).
Increment 2—Final compliance.	(Dates to be specified in state plan).[b]

[a] Site-specific schedules can be used at the discretion of the state.

[b] The date can be no later than 3 years after the effective date of state plan approval or December 1, 2005 for CISWI units that commenced construction on or before November 30, 1999. The date can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018, for CISWI units that commenced construction on or before June 4, 2010.

[76 FR 15784, Mar. 21, 2011, as amended at 78 FR 9207, Feb. 7, 2013]

TABLE 2 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO INCINERATORS BEFORE [DATE TO BE SPECIFIED IN STATE PLAN][B]

For the air pollutant	You must meet this emission limitation[a]	Using this averaging time	And determining compliance using this method
Cadmium	0.004 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part)
Carbon monoxide	157 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10, 10A, or 10B, of appendix A of this part)
Dioxins/furans (toxic equivalency basis).	0.41 nanograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 23 of appendix A of this part)
Hydrogen chloride	62 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 120 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.04 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part)
Mercury	0.47 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008).[c]
Opacity	10 percent	Three 1-hour blocks consisting of ten 6-minute average opacity values.	Performance test (Method 9 at 40 CFR part 60, appendix A–4).

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Oxides of nitrogen ...	388 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Methods 7or 7E at 40 CFR part 60, appendix A–4).
Particulate matter	70 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 5 or 29 of appendix A of ths part)
Sulfur dioxide	20 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c of appendix A of this part)

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.
[b] Applies only to incinerators subject to the CISWI standards through a state plan or the Federal plan prior to June 4, 2010. The date specified in the state plan can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018.
[c] Incorporated by reference, *see* § 60.17.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15784, Mar. 21, 2011]

Table 3 to Subpart DDDD of Part 60—Model Rule—Operating Limits for Wet Scrubbers

For these operating parameters	You must establish these operating limits	And monitor using these minimum frequencies		
		Data measurement	Data recording	Averaging time
Charge rate	Maximum charge rate.	Continuous	Every hour	Daily (batch units). 3-hour rolling (continuous and intermittent units) [a]
Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage.	Continuous	Every 15 minutes ...	3-hour rolling [a]
Scrubber liquor flow rate.	Minimum flow rate ..	Continuous	Every 15 minutes ...	3-hour rolling [a]
Scrubber liquor pH	Minimum pH	Continuous	Every 15 minutes ...	3-hour rolling [a]

[a] Calculated each hour as the average of the previous 3 operating hours.

Table 4 to Subpart DDDD of Part 60—Model Rule—Toxic Equivalency Factors

Dioxin/furan isomer	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.001

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15785, Mar. 21, 2011]

Table 5 to Subpart DDDD of Part 60—Model Rule—Summary of Reporting Requirements [A]

Report	Due date	Contents	Reference
Waste Management Plan.	No later than the date specified in table 1 for submittal of the final control plan.	• Waste management plan	§ 60.2755.

Report	Due date	Contents	Reference
Initial Test Report	No later than 60 days following the initial performance test.	• Complete test report for the initial performance test • The values for the site-specific operating limits • Installation of bag leak detection systems for fabric filters	§ 60.2760.
Annual report	No later than 12 months following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 months following the previous report.	• Name and address ..... • Statement and signature by responsible official. • Date of report ..... • Values for the operating limits ..... • Highest recorded 3-hour average and the lowest 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported. • If a performance test was conducted during the reporting period, the results of the test. • If a performance test was not conducted during the reporting period, a statement that the requirements of § 60.2720(a) were met. • Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours but less than 2 weeks. • If you are conducting performance tests once every 3 years consistent with § 60.2720(a), the date of the last 2 performance tests, a comparison of the emission level you achieved in the last 2 performance tests to the 75 percent emission limit threshold required in § 60.2720(a) and a statement as to whether there have been any operational changes since the last performance test that could increase emissions.	§§ 60.2765 and 60.2770.
Emission limitation or operating limit deviation report.	By August 1 of that year for data collected during the first half of the calendar year. By February 1 of the following year for data collected during the second half of the calendar year.	• Dates and times of deviation ..... • Averaged and recorded data for those dates. • Duration and causes of each deviation and the corrective actions taken. • Copy of operating limit monitoring data and any test reports. • Dates, times and causes for monitor downtime incidents.	§ 60.2775 and 60.2780.
Qualified Operator Deviation Notification.	Within 10 days of deviation	• Statement of cause of deviation .. • Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible	§ 60.2785(a)(1).
Qualified Operator Deviation Status Report.	Every 4 weeks following deviation ..	• Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible • Request for approval to continue operation	§ 60.2785(a)(2).
Qualified Operator Deviation Notification of Resumed Operation.	Prior to resuming operation	• Notification that you are resuming operation	§ 60.2785(b)

[a] This table is only a summary, see the referenced sections of the rule for the complete requirements.

[65 FR 75362, Dec. 1, 2000, as amended at 76 FR 15785, Mar. 21, 2011]

TABLE 6 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO INCINERATORS ON AND AFTER [DATE TO BE SPECIFIED IN STATE PLAN] [a]

For the air pollutant	You must meet this emission limitation [b]	Using this averaging time	And determining compliance using this method
Cadmium	0.0026 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Carbon monoxide	17 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	4.6 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	0.13 nanograms per dry standard cubic meter.	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	29 parts per million dry volume.	3-run average (For Method 26, collect a minimum volume of 60 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.015 milligrams per dry standard cubic meter. [c]	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0048 milligrams per dry standard cubic meter.	3-run average (For Method 29 an ASTM D6784–02 (Reapproved 2008) [d], collect a minimum volume of 2 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008). [d]
Oxides of nitrogen	53 parts per million dry volume.	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Particulate matter filterable	34 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8).
Sulfur dioxide	11 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A–4).
Fugitive ash	Visible emissions for no more than 5% of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 at 40 CFR part 60, appendix A–7).

[a] The date specified in the state plan can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018.

[b] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.

[c] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 60.2720 if all of the other provisions of § 60.2720 are met. For all other pollutants that do not contain a footnote "c", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[d] Incorporated by reference, see § 60.17.

[76 FR 15485, Mar. 21, 2011, as amended at 78 FR 9208, Feb. 7, 2013]

TABLE 7 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO ENERGY RECOVERY UNITS AFTER MAY 20, 2011

[Date to be specified in state plan][a]

For the air pollutant	You must meet this emission limitation[b]		Using this averaging time	And determining compliance using this method
	Liquid/Gas	Solids		
Cadmium	0.023 milligrams per dry standard cubic meter.	Biomass—0.0014 milligrams per dry standard cubic meter.[c] Coal—0.0095 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Carbon monoxide.	35 parts per million dry volume.	Biomass—260 parts per million dry volume. Coal—95 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	2.9 nanograms per dry standard cubic meter.	Biomass—0.52 nanograms per dry standard cubic meter.[c] Coal—5.1 nanograms per dry standard cubic meter.[c].	3-run average (collect a minimum volume of 4 dry standard cubic meter).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	0.32 nanograms per dry standard cubic meter.	Biomass—0.12 nanograms per dry standard cubic meter. Coal—0.075 nanograms per dry standard cubic meter.[c].	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Hydrogen chloride.	14 parts per million dry volume.	Biomass—0.20 parts per million dry volume. Coal—13 parts per million dry volume.	3-run average (for Method 26, collect a minimum of 120 liters; for Method 26A, collect a minimum volume of 1 dry standard cubic meter).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	0.096 milligrams per dry standard cubic meter.	Biomass—0.014 milligrams per dry standard cubic meter.[c]. Coal—0.14 milligrams per dry standard cubic meter.[c].	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0024 milligrams per dry standard cubic meter.	Biomass—0.0022 milligrams per dry standard cubic meter. Coal—0.016 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008)[d], collect a minimum volume of 2 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008)[d].
Oxides of nitrogen.	76 parts per million dry volume.	Biomass—290 parts per million dry volume. Coal—340 parts per million dry volume.	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Particulate matter filterable.	110 milligrams per dry standard cubic meter.	Biomass—11 milligrams per dry standard cubic meter. Coal—160 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meter).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8) if the unit has an annual average heat input rate less than or equal to 250 MMBtu/hr; or PM CPMS (as specified in §60.2710(x)) if the unit has an annual average heat input rate greater than 250 MMBtu/hr.
Sulfur dioxide.	720 parts per million dry volume.	Biomass—7.3 parts per million dry volume. Coal—650 parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A–4).

[Date to be specified in state plan] [a]

For the air pollutant	You must meet this emission limitation [b]		Using this averaging time	And determining compliance using this method
	Liquid/Gas	Solids		
Fugitive ash	Visible emissions for no more than 5 percent of the hourly observation period.	Visible emissions for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 at 40 CFR part 60, appendix A–7).

[a] The date specified in the state plan can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018.
[b] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.
[c] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 60.2720 if all of the other provisions of § 60.2720 are met. For all other pollutants that do not contain a footnote "c", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing, with the exception of annual performance tests to certify a CEMS or PM CPMS.
[d] Incorporated by reference, see § 60.17.

[78 FR 9209, Feb. 7, 2013]

Table 8 to Subpart DDDD of Part 60—Model Rule—Emission Limitations That Apply to Waste-Burning Kilns After May 20, 2011

[Date to be specified in state plan.] [a]

For the air pollutant	You must meet this emission limitation [b]	Using this averaging time	And determining compliance using this method
Cadmium	0.0014 milligrams per dry standard cubic meter. [c].	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).
Carbon monoxide	110 (long kilns)/790 (preheater/precalciner) parts per million dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	1.3 nanograms per dry standard cubic meter. [c].	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	0.075 nanograms per dry standard cubic meter. [c].	3-run average (collect a minimum volume of 4 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Hydrogen chloride.	3.0 parts per million dry volume. [c]	3-run average (collect a minimum volume of 1 dry standard cubic meter) or 30-day rolling average if HCl CEMS is being used.	Performance test (Method 321 at 40 CFR part 63, appendix A of this part) or HCl CEMS if a wet scrubber is not used.
Lead	0.014 milligrams per dry standard cubic meter. [c].	3-run average (collect a minimum volume of 2 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).
Mercury	0.011 milligrams per dry standard cubic meter.	30-day rolling average	Mercury CEMS or sorbent trap monitoring system (performance specification 12A or 12B, respectively, of appendix B of this part.)
Oxides of nitrogen.	630 parts per million dry volume	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Particulate matter filterable.	4.6 milligrams per dry standard cubic meter.	30-day rolling average	PM CPMS (as specified in § 60.2710(x))
Sulfur dioxide	600 parts per million dry volume	3-run average (for Method 6, collect a minimum of 20 liters; for Method 6C, 1 hour minimum sample time per run).	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A–4).

[a] The date specified in the state plan can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018.
[b] All emission limitations are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.
[c] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 60.2720 if all of the other provisions of § 60.2720 are met. For all other pollutants that do not contain a footnote "c", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing, with the exception of annual performance tests to certify a CEMS or PM CPMS.

[78 FR 9210, Feb. 7, 2013]

TABLE 9 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS THAT APPLY TO SMALL, REMOTE INCINERATORS AFTER MAY 20, 2011

[Date to be specified in state plan] [a]

For the air pollutant	You must meet this emission limitation [b]	Using this averaging time	And determining compliance using this method
Cadmium	0.95 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).
Carbon monoxide	64 parts per million dry volume	3-run average (1 hour minimum sample time per run).	Performance test (Method 10 at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	4,400 nanograms per dry standard cubic meter [b].	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis).	180 nanograms per dry standard cubic meter [b].	3-run average (collect a minimum volume of 1 dry standard cubic meters).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Fugitive ash	Visible emissions for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emissions test (Method 22 at 40 CFR part 60, appendix A–7).
Hydrogen chloride	300 parts per million dry volume	3-run average (For Method 26, collect a minimum volume of 120 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meter per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Lead	2.1 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use ICPMS for the analytical finish.
Mercury	0.0053 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008), [c] collect a minimum volume of 2 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A).	Performance test (Method 29 or 30B at 40 CFR part 60, appendix A–8) or ASTM D6784–02 (Reapproved 2008). [c]
Oxides of nitrogen	190 parts per million dry volume	3-run average (for Method 7E, 1 hour minimum sample time per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Particulate matter (filterable)	270 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters).	Performance test (Method 5 or 29 at 40 CFR part 60, appendix A–3 or appendix A–8).
Sulfur dioxide	150 parts per million dry volume	3-run average (for Method 6, collect a minimum of 20 liters per run; for Method 6C, 1 hour minimum sample time per run).	Performance test (Method 6 or 6c at 40 CFR part 60, appendix A–4).

[a] The date specified in the state plan can be no later than 3 years after the effective date of approval of a revised state plan or February 7, 2018.

[b] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions. For dioxins/furans, you must meet either the total mass basis limit or the toxic equivalency basis limit.

[c] Incorporated by reference, see § 60.17.

[78 FR 9210, Feb. 7, 2013]

Subpart EEEE—Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006

SOURCE: 70 FR 74892, Dec. 16, 2005, unless otherwise noted.

INTRODUCTION

§ 60.2880 What does this subpart do?

This subpart establishes new source performance standards for other solid waste incineration (OSWI) units. Other solid waste incineration units are very small municipal waste combustion units and institutional waste incineration units.

§ 60.2881 When does this subpart become effective?

This subpart takes effect June 16, 2006. Some of the requirements in this subpart apply to planning the incineration unit and must be completed even before construction is initiated on the unit (i.e., the preconstruction requirements in §§ 60.2894 and 60.2895). Other requirements such as the emission limitations and operating limits apply when the unit begins operation.

APPLICABILITY

§ 60.2885 Does this subpart apply to my incineration unit?

Yes, if your incineration unit meets all the requirements specified in paragraphs (a) through (c) of this section.

(a) Your incineration unit is a new incineration unit as defined in § 60.2886.

(b) Your incineration unit is an OSWI unit as defined in § 60.2977 or an air curtain incinerator subject to this subpart as described in § 60.2888(b). Other solid waste incineration units are very small municipal waste combustion units and institutional waste incineration units as defined in § 60.2977.

(c) Your incineration unit is not excluded under § 60.2887.

§ 60.2886 What is a new incineration unit?

(a) A new incineration unit is an incineration unit subject to this subpart that meets either of the two criteria specified in paragraphs (a)(1) or (2) of this section.

(1) Commenced construction after December 9, 2004.

(2) Commenced reconstruction or modification on or after June 16, 2006.

(b) This subpart does not affect your incineration unit if you make physical or operational changes to your incineration unit primarily to comply with the emission guidelines in subpart FFFF of this part. Such changes do not qualify as reconstruction or modification under this subpart.

§ 60.2887 What combustion units are excluded from this subpart?

This subpart excludes the types of units described in paragraphs (a) through (q) of this section, as long as you meet the requirements of this section.

(a) *Cement kilns.* Your unit is excluded if it is regulated under subpart LLL of part 63 of this chapter (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry).

(b) *Co-fired combustors.* Your unit, that would otherwise be considered a very small municipal waste combustion unit, is excluded if it meets the five requirements specified in paragraphs (b)(1) through (5) of this section.

(1) The unit has a Federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.

(2) You notify the Administrator that the unit qualifies for the exclusion.

(3) You provide the Administrator with a copy of the Federally enforceable permit.

(4) You record the weights, each calendar quarter, of municipal solid waste and of all other fuels combusted.

(5) You keep each report for 5 years. These records must be kept on site for at least 2 years. You may keep the records off site for the remaining 3 years.

(c) *Cogeneration facilities.* Your unit is excluded if it meets the three requirements specified in paragraphs (c)(1) through (3) of this section.

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit meets all of these criteria.

(d) *Commercial and industrial solid waste incineration units.* Your unit is excluded if it is regulated under subparts CCCC or DDDD of this part and is required to meet the emission limitations established in those subparts.

(e) *Hazardous waste combustion units.* Your unit is excluded if it meets either of the two criteria specified in paragraph (e)(1) or (2) of this section.

(1) You are required to get a permit for your unit under section 3005 of the Solid Waste Disposal Act.

(2) Your unit is regulated under 40 CFR part 63, subpart EEE (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors).

(f) *Hospital/medical/infectious waste incinerators.* Your unit is excluded if it is regulated under subparts Ce or Ec of this part (New Source Performance Standards and Emission Guidelines for Hospital/Medical/Infectious Waste Incinerators).

(g) *Incinerators and air curtain incinerators in isolated areas of Alaska.* Your incineration unit is excluded if it is used at a solid waste disposal site in Alaska that is classified as a Class II or Class III municipal solid waste landfill, as defined in § 60.2977.

(h) *Rural institutional waste incinerators.* Your incineration unit is excluded if it is an institutional waste incineration unit, as defined in § 60.2977, and the application for exclusion described in paragraphs (h)(1) and (2) of this section has been approved by the Administrator.

(1) Prior to initial startup, an application and supporting documentation demonstrating that the institutional waste incineration unit meets the two requirements specified in paragraphs (h)(1)(i) and (ii) of this section must be submitted to and approved by the Administrator.

(i) The unit is located more than 50 miles from the boundary of the nearest Metropolitan Statistical Area,

(ii) Alternative disposal options are not available or are economically infeasible.

(2) The application described in paragraph (h)(1) of this section must be revised and resubmitted to the Administrator for approval every 5 years following the initial approval of the exclusion for your unit.

(3) If you re-applied for an exclusion pursuant to paragraph (h)(2) of this section and were denied exclusion by the Administrator, you have 3 years from the expiration date of the current exclusion to comply with the emission limits and all other applicable requirements of this subpart.

(i) *Institutional boilers and process heaters.* Your unit is excluded if it is regulated under 40 CFR part 63, subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters).

(j) *Laboratory Analysis Units.* Your unit is excluded if it burns samples of materials only for the purpose of chemical or physical analysis.

(k) *Materials recovery units.* Your unit is excluded if it combusts waste for the primary purpose of recovering metals. Examples include primary and secondary smelters.

(l) *Pathological waste incineration units.* Your institutional waste incineration unit or very small municipal waste combustion unit is excluded from this subpart if it burns 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in § 60.2977 and you notify the Administrator that the unit meets these criteria.

(m) *Small or large municipal waste combustion units.* Your unit is excluded if it is regulated under subparts AAAA, BBBB, Ea, Eb, or Cb, of this part and is

required to meet the emission limitations established in those subparts.

(n) *Small power production facilities.* Your unit is excluded if it meets the three requirements specified in paragraphs (n)(1) through (3) of this section.

(1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit meets all of these criteria.

(o) *Temporary-use incinerators and air curtain incinerators used in disaster recovery.* Your incineration unit is excluded if it is used on a temporary basis to combust debris from a disaster or emergency such as a tornado, hurricane, flood, ice storm, high winds, or act of bioterrorism and you comply with the requirements in § 60.2969.

(p) *Units that combust contraband or prohibited goods.* Your incineration unit is excluded if the unit is owned or operated by a government agency such as police, customs, agricultural inspection, or a similar agency to destroy only illegal or prohibited goods such as illegal drugs, or agricultural food products that can not be transported into the country or across State lines to prevent biocontamination. The exclusion does not apply to items either confiscated or incinerated by private, industrial, or commercial entities.

(q) *Incinerators used for national security.* Your incineration unit is excluded if it meets the requirements specified in either (q)(1) or (2) of this section.

(1) The incineration unit is used solely during military training field exercises to destroy national security materials integral to the field exercises.

(2) The incineration unit is used solely to incinerate national security materials, its use is necessary to safeguard national security, you follow the exclusion request requirements in paragraphs (q)(2)(i) and (ii) of this section, and the Administrator has approved your request for exclusion.

(i) The request for exclusion and supporting documentation must demonstrate both that the incineration unit is used solely to destroy national security materials and that a reliable alternative to incineration that ensures acceptable destruction of national security materials is unavailable, on either a permanent or temporary basis.

(ii) The request for exclusion must be submitted to and approved by the Administrator prior to initial startup.

§ 60.2888 Are air curtain incinerators regulated under this subpart?

(a) Air curtain incinerators that burn less than 35 tons per day of municipal solid waste or air curtain incinerators located at institutional facilities burning any amount of institutional waste generated at that facility are subject to all requirements of this subpart, including the emission limitations specified in table 1 of this subpart.

(b) Air curtain incinerators that burn only less than 35 tons per day of the materials listed in paragraphs (b)(1) through (4) of this section collected from the general public and from residential, commercial, institutional, and industrial sources; or, air curtain incinerators located at institutional facilities that burn only the materials listed in paragraphs (b)(1) through (4) of this section generated at that facility, are required to meet only the requirements in §§ 60.2970 through 60.2974 and are exempt from all other requirements of this subpart.

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent yard waste.

(4) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.2889 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If EPA has delegated authority to your State, local, or tribal agency, then that agency (as well as EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency, the

authorities contained in paragraphs (b)(1) through (6) of this section are retained by EPA and are not transferred to the State, local, or tribal agency.

(1) Approval of alternatives to the emission limitations in table 1 of this subpart and operating limits established under § 60.2916 and table 2 of this subpart.

(2) Approval of petitions for specific operating limits in § 60.2917.

(3) Approval of major alternatives to test methods.

(4) Approval of major alternatives to monitoring.

(5) Approval of major alternatives to recordkeeping and reporting.

(6) The status report requirements in § 60.2911(c)(2).

§ 60.2890 How are these new source performance standards structured?

These new source performance standards contain nine major components, as follows:

(a) Preconstruction siting analysis.

(b) Waste management plan.

(c) Operator training and qualification.

(d) Emission limitations and operating limits.

(e) Performance testing.

(f) Initial compliance requirements.

(g) Continuous compliance requirements.

(h) Monitoring.

(i) Recordkeeping and reporting.

§ 60.2891 Do all components of these new source performance standards apply at the same time?

No, you must meet the preconstruction siting analysis and waste management plan requirements before you commence construction, reconstruction, or modification of the OSWI unit. The operator training and qualification, emission limitations, operating limits, performance testing and compliance, monitoring, and most recordkeeping and reporting requirements are met after the OSWI unit begins operation.

PRECONSTRUCTION SITING ANALYSIS

§ 60.2894 Who must prepare a siting analysis?

(a) You must prepare a siting analysis if you commence construction, reconstruction, or modification of an OSWI unit after June 16, 2006.

(b) If you commence construction, reconstruction, or modification of an OSWI unit after December 9, 2004, but before June 16, 2006, you are not required to prepare the siting analysis specified in this subpart.

§ 60.2895 What is a siting analysis?

(a) The siting analysis must consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, you may consider costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of your OSWI unit's impacts that are prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, provided they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) You must complete and submit the siting requirements of this section as required under § 60.2952(c) prior to commencing construction, reconstruction, or modification.

WASTE MANAGEMENT PLAN

§ 60.2899 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§ 60.2900 When must I submit my waste management plan?

You must submit a waste management plan prior to commencing construction, reconstruction, or modification.

§ 60.2901 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements

such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures and implement those measures the source considers practical and feasible, considering the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

OPERATOR TRAINING AND QUALIFICATION

§ 60.2905 What are the operator training and qualification requirements?

(a) No OSWI unit can be operated unless a fully trained and qualified OSWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified OSWI unit operator may operate the OSWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified OSWI unit operators are temporarily not accessible, you must follow the procedures in § 60.2911.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (3) of this section.

(1) Training on the thirteen subjects listed in paragraphs (c)(1)(i) through (xiii) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Methods to monitor pollutants (including monitoring of incinerator and control device operating parameters) and monitoring equipment calibration procedures, where applicable.

(viii) Actions to correct malfunctions or conditions that may lead to malfunction.

(ix) Bottom and fly ash characteristics and handling procedures.

(x) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(xi) Pollution prevention.

(xii) Waste management practices.

(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that may serve as reference material following completion of the course.

§ 60.2906 When must the operator training course be completed?

The operator training course must be completed by the latest of the three dates specified in paragraphs (a) through (c) of this section.

(a) Six months after your OSWI unit startup.

(b) December 18, 2006.

(c) The date before an employee assumes responsibility for operating the OSWI unit or assumes responsibility for supervising the operation of the OSWI unit.

§ 60.2907 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.2905(c).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.2905(c)(2).

§ 60.2908 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the

five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.

(c) Inspection and maintenance.

(d) Responses to malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

§ 60.2909 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.2908.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.2907(a).

§ 60.2910 What site-specific documentation is required?

(a) Documentation must be available at the facility and readily accessible for all OSWI unit operators that addresses the nine topics described in paragraphs (a)(1) through (9) of this section. You must maintain this information and the training records required by paragraph (c) of this section in a manner that they can be readily accessed and are suitable for inspection upon request.

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Monitoring procedures for demonstrating compliance with the operating limits established under this subpart.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§ 60.2899 through 60.2901.

(9) Procedures for handling ash.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted by December 18, 2006 or prior to an employee's assumption of responsibilities for operation of the OSWI unit, whichever date is later.

(2) Subsequent annual reviews of the information listed in paragraph (a) of this section must be conducted not later than 12 months following the previous review.

(c) You must also maintain the information specified in paragraphs (c)(1) through (3) of this section.

(1) Records showing the names of OSWI unit operators who have completed review of the information in paragraph (a) of this section as required by paragraph (b) of this section, including the date of the initial review and all subsequent annual reviews.

(2) Records showing the names of the OSWI unit operators who have completed the operator training requirements under § 60.2905, met the criteria for qualification under § 60.2907, and maintained or renewed their qualification under § 60.2908 or § 60.2909. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

§ 60.2911 What if all the qualified operators are temporarily not accessible?

If all qualified operators are temporarily not accessible (i.e., not at the facility and not able to be at the facility within 1 hour), you must meet one of the three criteria specified in paragraphs (a) through (c) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When all qualified operators are not accessible for 12 hours or less, the OSWI unit may be operated by other

plant personnel familiar with the operation of the OSWI unit who have completed review of the information specified in §60.2910(a) within the past 12 months. You do not need to notify the Administrator or include this as a deviation in your annual report.

(b) When all qualified operators are not accessible for more than 12 hours, but less than 2 weeks, the OSWI unit may be operated by other plant personnel familiar with the operation of the OSWI unit who have completed a review of the information specified in §60.2910(a) within the past 12 months. However, you must record the period when all qualified operators were not accessible and include this deviation in the annual report as specified under §60.2956.

(c) When all qualified operators are not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (c)(1) and (2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to EPA every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible and requesting approval from EPA to continue operation of the OSWI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (c)(1) of this section. If EPA notifies you that your request to continue operation of the OSWI unit is disapproved, the OSWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if you meet the two requirements in paragraphs (c)(2)(i) and (ii) of this section.

(i) A qualified operator is accessible as required under §60.2905(a).

(ii) You notify EPA that a qualified operator is accessible and that you are resuming operation.

EMISSION LIMITATIONS AND OPERATING LIMITS

§60.2915 What emission limitations must I meet and by when?

You must meet the emission limitations specified in table 1 of this subpart 60 days after your OSWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

§60.2916 What operating limits must I meet and by when?

(a) If you use a wet scrubber to comply with the emission limitations, you must establish operating limits for four operating parameters (as specified in table 2 of this subpart) as described in paragraphs (a)(1) through (4) of this section during the initial performance test.

(1) Maximum charge rate, calculated using one of the two different procedures in paragraphs (a)(1)(i) or (ii) of this section, as appropriate.

(i) For continuous and intermittent units, maximum charge rate is the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(ii) For batch units, maximum charge rate is the charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(2) Minimum pressure drop across the wet scrubber, which is calculated as the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the wet scrubber, which is calculated as the average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(3) Minimum scrubber liquor flow rate, which is calculated as the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(4) Minimum scrubber liquor pH, which is calculated as the average liquor pH at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with the hydrogen chloride and sulfur dioxide emission limitations.

(b) You must meet the operating limits established during the initial performance test 60 days after your OSWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

§ 60.2917 What if I do not use a wet scrubber to comply with the emission limitations?

If you use an air pollution control device other than a wet scrubber or limit emissions in some other manner to comply with the emission limitations under § 60.2915, you must petition EPA for specific operating limits, the values of which are to be established during the initial performance test and then continuously monitored thereafter. You must not conduct the initial performance test until after the petition has been approved by EPA. Your petition must include the five items listed in paragraphs (a) through (e) of this section.

(a) Identification of the specific parameters you propose to use as operating limits.

(b) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants.

(c) A discussion of how you will establish the upper and/or lower values for these parameters that will establish the operating limits on these parameters.

(d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

§ 60.2918 What happens during periods of startup, shutdown, and malfunction?

The emission limitations and operating limits apply at all times except during OSWI unit startups, shutdowns, or malfunctions.

PERFORMANCE TESTING

§ 60.2922 How do I conduct the initial and annual performance test?

(a) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) All performance tests must be conducted using the methods in table 1 of this subpart.

(c) All performance tests must be conducted using the minimum run duration specified in table 1 of this subpart.

(d) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(e) Method 3A or 3B of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B of appendix A of this part must be used simultaneously with each method.

(f) All pollutant concentrations, except for opacity, must be adjusted to 7 percent oxygen using Equation 1 in ‘‘60.2975.

(g) Method 26A of appendix A of this part must be used for hydrogen chloride concentration analysis, with the additional requirements specified in paragraphs (g)(1) through (3) of this section.

(1) The probe and filter must be conditioned prior to sampling using the procedure described in paragraphs (g)(1)(i) through (iii) of this section.

(i) Assemble the sampling train(s) and conduct a conditioning run by collecting between 14 liters per minute (0.5 cubic feet per minute) and 30 liters per minute (1.0 cubic feet per minute) of gas over a one-hour period. Follow the sampling procedures outlined in section 8.1.5 of Method 26A of appendix A of this part. For the conditioning run, water can be used as the impinger solution.

(ii) Remove the impingers from the sampling train and replace with a fresh impinger train for the sampling run, leaving the probe and filter (and cyclone, if used) in position. Do not recover the filter or rinse the probe before the first run. Thoroughly rinse the impingers used in the preconditioning run with deionized water and discard these rinses.

(iii) The probe and filter assembly are conditioned by the stack gas and are not recovered or cleaned until the end of testing.

(2) For the duration of sampling, a temperature around the probe and filter (and cyclone, if used) between 120 °C (248 °F) and 134 °C (273 °F) must be maintained.

(3) If water droplets are present in the sample gas stream, the requirements specified in paragraphs (g)(3)(i) and (ii) of this section must be met.

(i) The cyclone described in section 6.1.4 of Method 26A of appendix A of this part must be used.

(ii) The post-test moisture removal procedure described in section 8.1.6 of Method 26A of appendix A of this part must be used.

§ 60.2923 How are the performance test data used?

You use results of performance tests to demonstrate compliance with the emission limitations in table 1 of this subpart.

INITIAL COMPLIANCE REQUIREMENTS

§ 60.2927 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?

You must conduct an initial performance test, as required under § 60.8, to determine compliance with the emission limitations in table 1 of this subpart and to establish operating limits using the procedure in § 60.2916 or § 60.2917. The initial performance test must be conducted using the test methods listed in table 1 of this subpart and the procedures in § 60.2922.

§ 60.2928 By what date must I conduct the initial performance test?

The initial performance test must be conducted within 60 days after your OSWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.2932 How do I demonstrate continuous compliance with the emission limitations and the operating limits?

(a) You must conduct an annual performance test for all of the pollutants in table 1 of this subpart for each OSWI unit to determine compliance with the emission limitations. The annual performance test must be conducted using the test methods listed in table 1 of this subpart and the procedures in 60.2922.

(b) You must continuously monitor carbon monoxide emissions to determine compliance with the carbon monoxide emissions limitation. Twelve-hour rolling average values are used to determine compliance. A 12-hour rolling average value above the carbon monoxide emission limit in table 1 of this subpart constitutes a deviation from the emission limitation.

(c) You must continuously monitor the operating parameters specified in § 60.2916 or established under § 60.2917. Three-hour rolling average values are used to determine compliance with the operating limits unless a different averaging period is established under § 60.2917. A 3-hour rolling average value (unless a different averaging period is established under § 60.2917) above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Operating limits do not apply during performance tests.

§ 60.2933 By what date must I conduct the annual performance test?

You must conduct annual performance tests within 12 months following the initial performance test. Conduct subsequent annual performance tests within 12 months following the previous one.

§ 60.2934 May I conduct performance testing less often?

(a) You can test less often for a given pollutant if you have test data for at least three consecutive annual tests,

and all performance tests for the pollutant over that period show that you comply with the emission limitation. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the 3rd year and no more than 36 months following the previous performance test.

(b) If your OSWI unit continues to meet the emission limitation for the pollutant, you may choose to conduct performance tests for that pollutant every 3rd year, but each test must be within 36 months of the previous performance test.

(c) If a performance test shows a deviation from an emission limitation for any pollutant, you must conduct annual performance tests for that pollutant until three consecutive annual performance tests for that pollutant all show compliance.

§ 60.2935 May I conduct a repeat performance test to establish new operating limits?

Yes, you may conduct a repeat performance test at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.

MONITORING

§ 60.2939 What continuous emission monitoring systems must I install?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for carbon monoxide and for oxygen. You must monitor the oxygen concentration at each location where you monitor carbon monoxide.

(b) You must install, evaluate, and operate each continuous emission monitoring system according to the ''Monitoring Requirements'' in § 60.13.

§ 60.2940 How do I make sure my continuous emission monitoring systems are operating correctly?

(a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure carbon monoxide and oxygen.

(b) Complete your initial evaluation of the continuous emission monitoring systems within 60 days after your OSWI unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

(c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your carbon monoxide and oxygen continuous emission monitoring systems. To validate carbon monoxide concentration levels, use EPA Method 10, 10A, or 10B of appendix A of this part. Use EPA Method 3 or 3A to measure oxygen. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. table 3 of this subpart shows the required span values and performance specifications that apply to each continuous emission monitoring system.

(d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

§ 60.2941 What is my schedule for evaluating continuous emission monitoring systems?

(a) Conduct annual evaluations of your continuous emission monitoring systems no more than 12 months after the previous evaluation was conducted.

(b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.2942 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems, and is the data collection requirement enforceable?

(a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for carbon monoxide are in parts per million by dry volume at 7 percent oxygen. Use the 1-hour averages of oxygen data from your continuous emission monitoring system to determine the actual oxygen level and to calculate emissions at 7 percent oxygen.

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous

emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

(c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for at least 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal or institutional solid waste.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you have deviated from the data collection requirement regardless of the emission level monitored.

(e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations.

(f) If continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements, refer to table 3 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

§ 60.2943 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?

(a) Use Equation 1 in § 60.2975 to calculate emissions at 7 percent oxygen.

(b) Use Equation 2 in § 60.2975 to calculate the 12-hour rolling averages for concentrations of carbon monoxide.

§ 60.2944 What operating parameter monitoring equipment must I install, and what operating parameters must I monitor?

(a) If you are using a wet scrubber to comply with the emission limitations under § 60.2915, you must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in table 2 of this subpart. These devices (or methods) must measure and record the values for these operating parameters at the frequencies indicated in table 2 of this subpart at all times.

(b) You must install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of any stack that could be used to bypass the control device. The measurement must include the date, time, and duration of the use of the bypass stack.

(c) If you are using a method or air pollution control device other than a wet scrubber to comply with the emission limitations under § 60.2915, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in § 60.2917.

§ 60.2945 Is there a minimum amount of operating parameter monitoring data I must obtain?

(a) Except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), you must conduct all monitoring at all times the OSWI unit is operating.

(b) You must obtain valid monitoring data for at least 75 percent of the operating hours per day for at least 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal or institutional solid waste.

(c) If you do not obtain the minimum data required in paragraphs (a) and (b) of this section, you have deviated from the data collection requirement regardless of the operating parameter level monitored.

(d) Do not use data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities for meeting the requirements of this subpart, including data averages and calculations. You must use all the data collected during all other periods in assessing compliance with the operating limits.

RECORDKEEPING AND REPORTING

§ 60.2949 What records must I keep?

You must maintain the 15 items (as applicable) as specified in paragraphs

(a) through (o) of this section for a period of at least 5 years.

(a) Calendar date of each record.

(b) Records of the data described in paragraphs (b)(1) through (8) of this section.

(1) The OSWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet every 15 minutes of operation, as applicable.

(3) Pressure drop across the wet scrubber system every 15 minutes of operation or amperage to the wet scrubber every 15 minutes of operation, as applicable.

(4) Liquor pH as introduced to the wet scrubber every 15 minutes of operation, as applicable.

(5) For OSWI units that establish operating limits for controls other than wet scrubbers under § 60.2917, you must maintain data collected for all operating parameters used to determine compliance with the operating limits.

(6) All 1-hour average concentrations of carbon monoxide emissions.

(7) All 12-hour rolling average values of carbon monoxide emissions and all 3-hour rolling average values of continuously monitored operating parameters.

(8) Records of the dates, times, and durations of any bypass of the control device.

(c) Identification of calendar dates and times for which continuous emission monitoring systems or monitoring systems used to monitor operating limits were inoperative, inactive, malfunctioning, or out of control (except for downtime associated with zero and span and other routine calibration checks). Identify the pollutant emissions or operating parameters not measured, the duration, reasons for not obtaining the data, and a description of corrective actions taken.

(d) Identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken.

(e) Identification of calendar dates and times for which monitoring data show a deviation from the carbon monoxide emissions limit in table 1 of this subpart or a deviation from the operating limits in table 2 of this subpart or a deviation from other operating limits established under § 60.2917 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

(f) Calendar dates when continuous monitoring systems did not collect the minimum amount of data required under §§ 60.2942 and 60.2945.

(g) For carbon monoxide continuous emissions monitoring systems, document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part.

(h) Records of the calibration of any monitoring devices required under § 60.2944.

(i) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations and a description of the types of waste burned during the test.

(j) All documentation produced as a result of the siting requirements of §§ 60.2894 and 60.2895.

(k) Records showing the names of OSWI unit operators who have completed review of the information in § 60.2910(a) as required by § 60.2910(b), including the date of the initial review and all subsequent annual reviews.

(l) Records showing the names of the OSWI unit operators who have completed the operator training requirements under § 60.2905, met the criteria for qualification under § 60.2907, and maintained or renewed their qualification under § 60.2908 or § 60.2909. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(m) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

(n) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

(o) The information listed in § 60.2910(a).

§ 60.2950 Where and in what format must I keep my records?

(a) You must keep each record on site for at least 2 years. You may keep the records off site for the remaining 3 years.

(b) All records must be available in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§ 60.2951 What reports must I submit?

See table 4 of this subpart for a summary of the reporting requirements.

§ 60.2952 What must I submit prior to commencing construction?

You must submit a notification prior to commencing construction that includes the five items listed in paragraphs (a) through (e) of this section.

(a) A statement of intent to construct.

(b) The anticipated date of commencement of construction.

(c) All documentation produced as a result of the siting requirements of § 60.2895.

(d) The waste management plan as specified in §§ 60.2899 through 60.2901.

(e) Anticipated date of initial startup.

§ 60.2953 What information must I submit prior to initial startup?

You must submit the information specified in paragraphs (a) through (e) of this section prior to initial startup.

(a) The type(s) of waste to be burned.

(b) The maximum design waste burning capacity.

(c) The anticipated maximum charge rate.

(d) If applicable, the petition for site-specific operating limits under § 60.2917.

(e) The anticipated date of initial startup.

§ 60.2954 What information must I submit following my initial performance test?

You must submit the information specified in paragraphs (a) and (b) of this section no later than 60 days following the initial performance test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial performance test results obtained under § 60.2927, as applicable.

(b) The values for the site-specific operating limits established in § 60.2916 or § 60.2917.

§ 60.2955 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in § 60.2954. You must submit subsequent reports no more than 12 months following the previous report.

§ 60.2956 What information must I include in my annual report?

The annual report required under § 60.2955 must include the ten items listed in paragraphs (a) through (j) of this section. If you have a deviation from the operating limits or the emission limitations, you must also submit deviation reports as specified in §§ 60.2957 through 60.2959.

(a) Company name and address.

(b) Statement by the owner or operator, with their name, title, and signature, certifying the truth, accuracy, and completeness of the report. Such certifications must also comply with the requirements of 40 CFR 70.5(d) or 40 CFR 71.5(d).

(c) Date of report and beginning and ending dates of the reporting period.

(d) The values for the operating limits established pursuant to § 60.2916 or § 60.2917.

(e) If no deviation from any emission limitation or operating limit that applies to you has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period, and that no monitoring system used to determine compliance with the emission limitations or operating limits was inoperative, inactive, malfunctioning or out of control.

(f) The highest recorded 12-hour average and the lowest recorded 12-hour average, as applicable, for carbon monoxide emissions and the highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported.

(g) Information recorded under § 60.2949(b)(6) and (c) through (e) for the calendar year being reported.

(h) If a performance test was conducted during the reporting period, the results of that test.

(i) If you met the requirements of § 60.2934(a) or (b), and did not conduct a performance test during the reporting period, you must state that you met the requirements of § 60.2934(a) or (b), and, therefore, you were not required to conduct a performance test during the reporting period.

(j) Documentation of periods when all qualified OSWI unit operators were unavailable for more than 12 hours, but less than 2 weeks.

§ 60.2957 What else must I report if I have a deviation from the operating limits or the emission limitations?

(a) You must submit a deviation report if any recorded 3-hour average parameter level is above the maximum operating limit or below the minimum operating limit established under this subpart, if any recorded 12-hour average carbon monoxide emission rate is above the emission limitation, if the control device was bypassed, or if a performance test was conducted that showed a deviation from any emission limitation.

(b) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

§ 60.2958 What must I include in the deviation report?

In each report required under § 60.2957, for any pollutant or operating parameter that deviated from the emission limitations or operating limits specified in this subpart, include the seven items described in paragraphs (a) through (g) of this section.

(a) The calendar dates and times your unit deviated from the emission limitations or operating limit requirements.

(b) The averaged and recorded data for those dates.

(c) Durations and causes of each deviation from the emission limitations or operating limits and your corrective actions.

(d) A copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels.

(e) The dates, times, number, duration, and causes for monitor downtime incidents (other than downtime associated with zero, span, and other routine calibration checks).

(f) Whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period.

(g) The dates, times, and durations of any bypass of the control device.

§ 60.2959 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?

(a) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (a)(1) and (2) of this section.

(1) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (a)(1)(i) through (iii) of this section.

(i) A statement of what caused the deviation.

(ii) A description of what you are doing to ensure that a qualified operator is accessible.

(iii) The date when you anticipate that a qualified operator will be available.

(2) Submit a status report to EPA every 4 weeks that includes the three items in paragraphs (a)(2)(i) through (iii) of this section.

(i) A description of what you are doing to ensure that a qualified operator is accessible.

(ii) The date when you anticipate that a qualified operator will be accessible.

(iii) Request approval from EPA to continue operation of the OSWI unit.

(b) If your unit was shut down by EPA, under the provisions of § 60.2911(c)(2), due to a failure to provide an accessible qualified operator, you must notify EPA that you are resuming operation once a qualified operator is accessible.

§ 60.2960 Are there any other notifications or reports that I must submit?

Yes, you must submit notifications as provided by § 60.7.

§ 60.2961 In what form can I submit my reports?

Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

§ 60.2962 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

TITLE V OPERATING PERMITS

§ 60.2966 Am I required to apply for and obtain a title V operating permit for my unit?

Yes, if you are subject to this subpart, you are required to apply for and obtain a title V operating permit unless you meet the relevant requirements for an exemption specified in § 60.2887.

§ 60.2967 When must I submit a title V permit application for my new unit?

(a) If your new unit subject to this subpart is not subject to an earlier permit application deadline, a complete title V permit application must be submitted on or before one of the dates specified in paragraphs (a)(1) or (2) of this section. (See section 503(c) of the Clean Air Act and 40 CFR 70.5(a)(1)(i) and 40 CFR 71.5(a)(1)(i).)

(1) For a unit that commenced operation as a new source as of December 16, 2005, then a complete title V permit application must be submitted not later than December 18, 2006.

(2) For a unit that does not commence operation as a new source until after December 16, 2005, then a complete title V permit application must be submitted not later than 12 months after the date the unit commences operation as a new source.

(b) If your new unit subject to this subpart is subject to title V as a result of some triggering requirement(s) other than this subpart (for example, a unit subject to this subpart may be a major source or part of a major source), then your unit may be required to apply for a title V permit prior to the deadlines specified in paragraph (a) of this section. If more than one requirement triggers a source's obligation to apply for a title V permit, the 12-month timeframe for filing a title V permit application is triggered by the requirement that first causes the source to be subject to title V. (See section 503(c) of the Clean Air Act and 40 CFR 70.3(a) and (b), 40 CFR 70.5(a)(1)(i), 40 CFR 71.3(a) and (b), and 40 CFR 71.5(a)(1)(i).)

(c) A ''complete'' title V permit application is one that has been determined or deemed complete by the relevant permitting authority under section 503(d) of the Clean Air Act and 40 CFR 70.5(a)(2) or 40 CFR 71.5(a)(2). You must submit a complete permit application by the relevant application deadline in order to operate after this date in compliance with Federal law. (See sections 503(d) and 502(a) of the Clean Air Act and 40 CFR 70.7(b) and 40 CFR 71.7(b).)

TEMPORARY-USE INCINERATORS AND AIR CURTAIN INCINERATORS USED IN DISASTER RECOVERY

§ 60.2969 What are the requirements for temporary-use incinerators and air curtain incinerators used in disaster recovery?

Your incinerator or air curtain incinerator is excluded from the requirements of this subpart if it is used on a temporary basis to combust debris from a disaster or emergency such as a tornado, hurricane, flood, ice storm, high winds, or act of bioterrorism. To qualify for this exclusion, the incinerator or air curtain incinerator must be used to combust debris in an area declared a State of Emergency by a local or State government, or the President, under the authority of the Stafford Act, has declared that an emergency or a major disaster exists in the area, and you must follow the requirements specified in paragraphs (a) through (c) of this section.

(a) If the incinerator or air curtain incinerator is used during a period that begins on the date the unit started operation and lasts 8 weeks or less within

the boundaries of the same emergency or disaster declaration area, then it is excluded from the requirements of this subpart. You do not need to notify the Administrator of its use or meet the emission limitations or other requirements of this subpart.

(b) If the incinerator or air curtain incinerator will be used during a period that begins on the date the unit started operation and lasts more than 8 weeks within the boundaries of the same emergency or disaster declaration area, you must notify the Administrator that the temporary-use incinerator or air curtain incinerator will be used for more than 8 weeks and request permission to continue to operate the unit as specified in paragraphs (b)(1) and (2) of this section.

(1) The notification must be submitted in writing by the date 8 weeks after you start operation of the temporary-use incinerator or air curtain incinerator within the boundaries of the current emergency or disaster declaration area.

(2) The notification must contain the date the incinerator or air curtain incinerator started operation within the boundaries of the current emergency or disaster declaration area, identification of the disaster or emergency for which the incinerator or air curtain incinerator is being used, a description of the types of materials being burned in the incinerator or air curtain incinerator, a brief description of the size and design of the unit (for example, an air curtain incinerator or a modular starved-air incinerator), the reasons the incinerator or air curtain incinerator must be operated for more than 8 weeks, and the amount of time for which you request permission to operate including the date you expect to cease operation of the unit.

(c) If you submitted the notification containing the information in paragraph (b)(2) by the date specified in paragraph (b)(1), you may continue to operate the incinerator or air curtain incinerator for another 8 weeks, which is a total of 16 weeks from the date the unit started operation within the boundaries of the current emergency or disaster declaration area. You do not have to meet the emission limitations or other requirements of this subpart during this period.

(1) At the end of 16 weeks from the date the incinerator or air curtain incinerator started operation within the boundaries of the current emergency or disaster declaration area, you must cease operation of the unit or comply with all requirements of this subpart, unless the Administrator has approved in writing your request to continue operation.

(2) If the Administrator has approved in writing your request to continue operation, then you may continue to operate the incinerator or air curtain incinerator within the boundaries of the current emergency or disaster declaration area until the date specified in the approval, and you do not need to comply with any other requirements of this subpart during the approved time period.

AIR CURTAIN INCINERATORS THAT BURN ONLY WOOD WASTE, CLEAN LUMBER, AND YARD WASTE

§ 60.2970 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open, integrated combustion chamber (fire box) or open pit or trench (trench burner) in which combustion occurs. For the purpose of this subpart and subpart FFFF of this part only, air curtain incinerators include both firebox and trench burner units.

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (4) of this section are required to meet only the requirements in §§ 60.2970 through 60.2974 and are exempt from all other requirements of this subpart.

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent yard waste.

(4) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.2971 What are the emission limitations for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?

(a) Within 60 days after your air curtain incinerator reaches the charge rate at which it will operate, but no

later than 180 days after its initial startup, you must meet the two limitations specified in paragraphs (a)(1) and (2) of this section.

(1) The opacity limitation is 10 percent (6-minute average), except as described in paragraph (a)(2) of this section.

(2) The opacity limitation is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) The limitations in paragraph (a) of this section apply at all times except during malfunctions.

§ 60.2972 How must I monitor opacity for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

(b) Conduct an initial test for opacity as specified in § 60.8.

(c) After the initial test for opacity, conduct annual tests no more than 12 months following the date of your previous test.

(d) If the air curtain incinerator has been out of operation for more than 12 months following the date of the previous test, then you must conduct a test for opacity upon startup of the unit.

§ 60.2973 What are the recordkeeping and reporting requirements for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?

(a) Prior to commencing construction on your air curtain incinerator, submit the three items described in paragraphs (a)(1) through (3) of this section.

(1) Notification of your intent to construct the air curtain incinerator.

(2) Your planned initial startup date.

(3) Types of materials you plan to burn in your air curtain incinerator.

(b) Keep records of results of all initial and annual opacity tests in either paper copy or computer-readable format that can be printed upon request, unless the Administrator approves another format, for at least 5 years. You must keep each record on site for at least 2 years. You may keep the records off site for the remaining 3 years.

(c) Make all records available for submittal to the Administrator or for an inspector's review.

(d) You must submit the results (each 6-minute average) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.

(f) Keep a copy of the initial and annual reports on site for a period of 5 years. You must keep each report on site for at least 2 years. You may keep the reports off site for the remaining 3 years.

§ 60.2974 Am I required to apply for and obtain a title V operating permit for my air curtain incinerator that burns only wood waste, clean lumber, and yard waste?

Yes, if your air curtain incinerator is subject to this subpart, you are required to apply for and obtain a title V operating permit as specified in §§ 60.2966 and 60.2967.

EQUATIONS

§ 60.2975 What equations must I use?

(a) *Percent oxygen.* Adjust all pollutant concentrations to 7 percent oxygen using equation 1 of this section.

$$C_{adj} = C_{meas} * (20.9 - 7)/(20.9 - \%O_2) \qquad \text{(Eq. 1)}$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen

C_{meas} = pollutant concentration measured on a dry basis

(20.9–7) = 20.9 percent oxygen–7 percent oxygen (defined oxygen correction basis)

20.9 = oxygen concentration in air, percent

$\%O_2$ = oxygen concentration measured on a dry basis, percent

(b) *Capacity of a very small municipal waste combustion unit.* For very small municipal waste combustion units that can operate continuously for 24-hour periods, calculate the unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For very small municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your very small municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your very small municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For very small municipal waste combustion units with a design not based on heat input capacity, use the maximum design charging rate.

(c) *Capacity of a batch very small municipal waste combustion unit.* Calculate the capacity of a batch OSWI unit as the maximum design amount of municipal solid waste it can charge per batch multiplied by the maximum number of batches it can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the unit can combust 24/16, or 1.5 batches, in 24 hours.

(d) *Carbon monoxide pollutant rate.* When hourly average pollutant rates (E_h) are obtained (*e.g.*, CEMS values), compute the rolling average carbon monoxide pollutant rate (E_a) for each 12-hour period using the following equation:

$$E_a = \frac{1}{12}\sum_{j=1}^{12} E_{hj} \qquad \text{(Eq. 2)}$$

Where:

E_a = Average carbon monoxide pollutant rate for the 12-hour period, ppm corrected to 7 percent O_2.

E_{hj} = Hourly arithmetic average pollutant rate for hour ''j,'' ppm corrected to 7 percent O_2.

DEFINITIONS

§ 60.2977 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subpart A (General Provisions) of this part.

Administrator means:

(1) For approved and effective State section 111(d)/129 plans, the Director of the State air pollution control agency, or his or her delegatee;

(2) For Federal section 111(d)/129 plans, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by the Administrator of the EPA to perform the specified task; and

(3) For NSPS, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by the Administrator of the EPA to perform the specified task.

Air curtain incinerator means an incineration unit operating by forcefully projecting a curtain of air across an open, integrated combustion chamber (fire box) or open pit or trench (trench burner) in which combustion occurs. For the purpose of this subpart and subpart FFFF of this part only, air curtain incinerators include both firebox and trench burner units.

Auxiliary fuel means natural gas, liquified petroleum gas, fuel oil, or diesel fuel.

Batch OSWI unit means an OSWI unit that is designed such that neither waste charging nor ash removal can occur during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Chemotherapeutic waste means waste material resulting from the production or use of anti-neoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Class II municipal solid waste landfill means a landfill that meets four criteria:

(1) Accepts, for incineration or disposal, less than 20 tons per day of municipal solid waste or other solid wastes based on an annual average;

(2) Is located on a site where there is no evidence of groundwater pollution caused or contributed to by the landfill;

(3) Is not connected by road to a Class I municipal solid waste landfill, as defined by Alaska regulatory code 18 AAC 60.300(c) or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill; and

(4) Serves a community that meets one of two criteria:

(i) Experiences for at least three months each year, an interruption in access to surface transportation, preventing access to a Class I municipal solid waste landfill; or

(ii) Has no practicable waste management alternative, with a landfill located in an area that annually receives 25 inches or less of precipitation.

Class III municipal solid waste landfill is a landfill that is not connected by road to a Class I municipal solid waste landfill, as defined by Alaska regulatory code 18 AAC 60.300(c) or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill, and that accepts, for disposal, either of the following two criteria:

(1) Ash from incinerated municipal waste in quantities less than 1 ton per day on an annual average, which ash must be free of food scraps that might attract animals; or

(2) Less than 5 tons per day of municipal solid waste, based on an annual average, and is not located in a place that meets either of the following criteria:

(i) Where public access is restricted, including restrictions on the right to move to the place and reside there; or

(ii) That is provided by an employer and that is populated totally by persons who are required to reside there as a condition of employment and who do not consider the place to be their permanent residence.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

Collected from means the transfer of material from the site at which the material is generated to a separate site where the material is burned.

Contained gaseous material means gases that are in a container when that container is combusted.

Continuous emission monitoring system or CEMS means a monitoring system for continuously measuring and recording the emissions of a pollutant from an OSWI unit.

Continuous OSWI unit means an OSWI unit that is designed to allow waste charging and ash removal during combustion.

Deviation means any instance in which a unit that meets the requirements in § 60.2885, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any unit that meets the requirements in § 60.2885 and is required to obtain such a permit; or

(3) Fails to meet any emission limitation, operating limit, or operator qualification and accessibility requirement in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is allowed by this subpart.

Dioxins/furans means tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Energy recovery means the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating.

EPA means the Administrator of the EPA or employee of the EPA that is delegated the authority to perform the specified task.

Institutional facility means a land-based facility owned and/or operated by an organization having a governmental, educational, civic, or religious purpose such as a school, hospital, prison, military installation, church, or other similar establishment or facility.

Institutional waste means solid waste (as defined in this subpart) that is combusted at any institutional facility using controlled flame combustion in an enclosed, distinct operating unit: whose design does not provide for energy recovery (as defined in this subpart); operated without energy recovery (as defined in this subpart); or operated with only waste heat recovery (as defined in this subpart). Institutional waste also means solid waste (as defined in this subpart) combusted on site in an air curtain incinerator that is a distinct operating unit of any institutional facility.

Institutional waste incineration unit means any combustion unit that combusts institutional waste (as defined in this subpart) and is a distinct operating unit of the institutional facility that generated the waste. Institutional waste incineration units include field-erected, modular, cyclonic burn barrel, and custom built incineration units operating with starved or excess air, and any air curtain incinerator that is a distinct operating unit of the institutional facility that generated the institutional waste (except those air curtain incinerators listed in § 60.2888(b)).

Intermittent OSWI unit means an OSWI unit that is designed to allow waste charging, but not ash removal, during combustion.

Low-level radioactive waste means waste material that contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable Federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

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.

Metropolitan Statistical Area means any areas listed as metropolitan statistical areas in OMB Bulletin No. 05–02 entitled ''Update of Statistical Area Definitions and Guidance on Their Uses'' dated February 22, 2005 (available on the Web at *http://www.whitehouse.gov/omb/bulletins/)*.

Modification or modified unit means an incineration unit you have changed on or after June 16, 2006 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs (current dollars). For an OSWI unit, to determine what systems are within the boundary of the unit used to calculate these costs, see the definition of OSWI unit.

(2) Any physical change in the unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Municipal solid waste means refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that: (1) the term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and (2) an incineration unit shall not be considered to be combusting municipal solid waste for purposes of this subpart if it combusts a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste, as determined by § 60.2887(b).

Municipal waste combustion unit means, for the purpose of this subpart and subpart FFFF of this part, any setting or equipment that combusts municipal solid waste (as defined in this subpart) including, but not limited to, field-erected, modular, cyclonic burn barrel, and custom built incineration

units (with or without energy recovery) operating with starved or excess air, boilers, furnaces, pyrolysis/combustion units, and air curtain incinerators (except those air curtain incinerators listed in § 60.2888(b)).

Other solid waste incineration (OSWI) unit means either a very small municipal waste combustion unit or an institutional waste incineration unit, as defined in this subpart. Unit types listed in § 60.2887 as being excluded from the subpart are not OSWI units subject to this subpart. While not all OSWI units will include all of the following components, an OSWI unit includes, but is not limited to, the municipal or institutional solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The OSWI unit does not include air pollution control equipment or the stack. The OSWI unit boundary starts at the municipal or institutional waste hopper (if applicable) and extends through two areas:

(1) The combustion unit flue gas system, which ends immediately after the last combustion chamber or after the waste heat recovery equipment, if any; and

(2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. The OSWI unit includes all ash handling systems connected to the bottom ash handling system.

Particulate matter means total particulate matter emitted from OSWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Reconstruction means rebuilding an incineration unit and meeting two criteria:

(1) The reconstruction begins on or after June 16, 2006.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the unit (not including land) updated to current costs (current dollars). For an OSWI unit, to determine what systems are within the boundary of the unit used to calculate these costs, see the definition of OSWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Shutdown means the period of time after all waste has been combusted in the primary chamber. For continuous OSWI, shutdown shall commence no less than 2 hours after the last charge to the incinerator. For intermittent OSWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch OSWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

Solid waste means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014).

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the OSWI unit. For batch OSWI, startup means the period of time between activation of the system and ignition of the waste.

Very small municipal waste combustion unit means any municipal waste combustion unit that has the capacity to combust less than 35 tons per day of municipal solid waste or refuse-derived fuel, as determined by the calculations in § 60.2975.

Waste heat recovery means the process of recovering heat from the combustion flue gases outside of the combustion firebox by convective heat transfer only.

Wet scrubber means an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include:

(1) Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

(2) Construction, renovation, or demolition wastes.

(3) Clean lumber.

(4) Treated wood and treated wood products, including wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. Yard waste comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes.

(2) Clean lumber.

TABLE 1 TO SUBPART EEEE OF PART 60—EMISSION LIMITATIONS

As stated in § 60.2915, you must comply with the following:

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
1. Cadmium	18 micrograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 29 of appendix A of this part.
2. Carbon monoxide	40 parts per million by dry volume.	3-run average (1 hour minimum sample time per run during performance test), and 12-hour rolling averages measured using CEMS. [b]	Method 10, 10A, or 10B of appendix A of this part and CEMS.
3. Dioxins/furans (total basis)	33 nanograms per dry standard cubic meter.	3-run average (1 hour minimum sample meter time per run).	Method 23 of appendix A of this part.
4. Hydrogen chloride	15 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Method 26A of appendix A of this part.
5. Lead	226 micrograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 29 of appendix A of this part.
6. Mercury	74 micrograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 29 of appendix A of this part.
7. Opacity	10 percent	6-minute average (observe over three 1-hour test runs; i.e., thirty 6-minute averages).	Method 9 of appendix A of this part.
8. Oxides of nitrogen	103 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Method 7, 7A, 7C, 7D, or 7E of appendix A of this part, or ANSI/ASME PTC 19.10–1981 (IBR, see § 60.17(h)) in lieu of Methods 7 and 7C only.
9. Particulate matter	0.013 grains per dry standard cubic foot.	3-run average (1 hour minimum sample time per run).	Method 5 or 29 of appendix A of this part.

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
10. Sulfur dioxide	3.1 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Method 6 or 6C of appendix A of this part, or ANSI/ASME PTC 19.10–1981 (IBR, see § 60.17(h)) in lieu of Method 6 only.

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.
[b] Calculated each hour as the average of the previous 12 operating hours.

TABLE 2 TO SUBPART EEEE OF PART 60—OPERATING LIMITS FOR INCINERATORS AND WET SCRUBBERS

As stated in § 60.2916, you must comply with the following:

For these operating parameters	You must establish these operating limits	And monitoring using these minimum frequencies		
		Data measurement	Data recording	Averaging time
1. Charge rate	Maximum charge rate	Continuous	Every hour	Daily for batch units. 3-hour rolling for continuous and intermittent units [a].
2. Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage.	Continuous	Every 15 minutes	3-hour rolling [a].
3. Scrubber liquor flow rate.	Minimum flow rate	Continuous	Every 15 minutes	3-hour rolling [a].
4. Scrubber liquor pH	Minimum pH	Continuous	Every 15 minutes	3-hour rolling [a].

[a] Calculated each hour as the average of the previous 3 operating hours.

TABLE 3 TO SUBPART EEEE OF PART 60—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

As stated in § 60.2940, you must comply with the following:

For the following pollutants	Use the following span values for your CEMS	Use the following performance specifications (P.S.) in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
1. Carbon Monoxide	125 percent of the maximum hourly potential carbon monoxide emissions of the waste combustion unit.	P.S.4A	Method 10.
2. Oxygen	25 percent oxygen	P.S.3	Method 3A or 3B, or ANSI/ASME PTC 19.10–1981 (IBR, see § 60.17(h)) in lieu of Method 3B only.

TABLE 4 TO SUBPART EEEE OF PART 60—SUMMARY OF REPORTING REQUIREMENTS

As stated in § 60.2951, you must comply with the following:

Report	Due date	Contents	Reference
1. Preconstruction report	a. Prior to commencing construction.	i. Statement of intent to construct;	§ 60.2952.
		ii. Anticipated date of commencement of onstruction;	§ 60.2952.
		iii. Documentation for siting requirements;	§ 60.2952.
		iv. Waste management plan; and	§ 60.2952.
		v. Anticipated date of initial startup.	§ 60.2952.
2. Startup notification	a. Prior to initial startup	i. Types of waste to be burned;	§ 60.2953.
		ii. Maximum design waste burning capacity;	§ 60.2953.
		iii. Anticipated maximum charge rate;	§ 60.2953.
		iv. If applicable, the petition for site-specific operating limits; and	§ 60.2953.
		v. Anticipated date of initial startup.	§ 60.2953.

Report	Due date	Contents	Reference
3. Initial test report	a. No later than 60 days following the initial performance test.	i. Complete test report for the initial performance test; and	§ 60.2954.
		ii. The values for the site-specific operating limits.	§ 60.2954.
4. Annual report	a. No later than 12 months following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 months following the previous report.	i. Company Name and address;	§§ 60.2955 and 60.2956.
		ii. Statement and signature by the owner or operator;	§§ 60.2955 and 60.2956.
		iii. Date of report;	§§ 60.2955 and 60.2956.
		iv. Values for the operating limits;	§§ 60.2955 and 60.2956.
		v. If no deviations or malfunctions were reported, a statement that no deviations occurred during the reporting period;	§§ 60.2955 and 60.2956.
		vi. Highest and lowest recorded 12-hour averages, as applicable, for carbon monoxide emissions and highest and lowest recorded 3-hour averages, as applicable, for each operating parameter recorded for the calendar year being reported;	§§ 60.2955 and 60.2956.
		vii. Information for deviations or malfunctions recorded under § 60.2949(b)(6) and (c) through (e);	§§ 60.2955 and 60.2956.
		viii. If a performance test was conducted during the reporting period, the results of the test;	§§ 60.2955 and 60.2956.
		ix. If a performance test was not conducted during the reporting period, a statement that the requirements of § 60.2934 (a) or (b) were met; and	§§ 60.2955 and 60.2956.
		x. Documentation of periods when all qualified OSWI unit operators were unavailable for more than 12 hours but less than 2 weeks.	§§ 60.2955 and 60.2956.
5. Emission limitation or operating limit deviation report.	a. By August 1 of that year for data collected during the first half of the calendar year. By February 1 of the following year for data collected during the second half of the calendar year.	i. Dates and times of deviation;	§§ 60.2957 and 60.2958.
		ii. Averaged and recorded data for those dates;	
		iii. Duration and causes of each deviation and the corrective actions taken;	§§ 60.2957 and 60.2958.
		iv. Copy of operating limit monitoring data and any test reports;	§§ 60.2957 and 60.2958.
		v. Dates, times, and causes for monitor downtimes incidents;	§§ 60.2957 and 60.2958.
		vi. Whether each deviation occurred during a period of startup, shutdown, or malfunction; and	§§ 60.2957 and 60.2958.
			§§ 60.2957 and 60.2958.
		vii. Dates, times, and durations of any bypass of the control device.	§§ 60.2957 and 60.2958.
6. Qualified operator deviation notification.	a. Within 10 days of deviation.	i. Statement of cause of deviation;	§ 60.2959(a)(1).
		ii. Description of efforts to have an accessible qualified operator; and	§ 60.2959(a)(1)
		iii. The date a qualified operator will be accessible.	§ 60.2959(a)(1).
7. Qualified operation deviation status report.	a. Every 4 weeks following deviation.	i. Description of efforts to have an accessible qualified operator;	§ 60.2959(a)(2).
		ii. The date a qualified operator will be accessible; and	§ 60.2959(a)(2).
		iii. Request to continue operation	§ 60.2959(a)(2).
8. Qualified operator deviation notification of resumed operation.	a. Prior to resuming operation.	i. Notification that you are resuming operation ...	§ 60.2959(b).

Note: This table is only a summary, see the referenced sections of the rule for the complete requirements.

[70 FR 74892, Dec. 16, 2005, as amended at 71 FR 67806, Nov. 24, 2006]

Subpart FFFF—Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units That Commenced Construction On or Before December 9, 2004

SOURCE: 70 FR 74907, Dec. 16, 2005, unless otherwise noted.

INTRODUCTION

§ 60.2980 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from other solid waste incineration (OSWI) units. The pollutants addressed by these emission guidelines are listed in table 2 of this subpart. These emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act and subpart B of this part.

§ 60.2981 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a State or United States protectorate with one or more existing OSWI units or air curtain incinerators subject to this subpart as described in § 60.2994(b) that commenced construction on or before December 9, 2004, you must submit a State plan to the U.S. Environmental Protection Agency (EPA) that implements the emission guidelines contained in this subpart.

(b) You must submit the State plan to EPA by December 18, 2006.

§ 60.2982 Is a State plan required for all States?

No, you are not required to submit a State plan if there are no existing OSWI units or air curtain incinerators subject to this subpart as described in § 60.2994(b) in your State and you submit a negative declaration letter in place of the State plan.

§ 60.2983 What must I include in my State plan?

(a) You must include the following nine items in your State plan:

(1) Inventory of affected incineration units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected incineration units in your State.

(3) Compliance schedules for each affected incineration unit.

(4) For each affected incineration unit, emission limitations, operator training and qualification requirements, a waste management plan, and operating parameter requirements that are at least as protective as the emission guidelines contained in this subpart.

(5) Stack testing, recordkeeping, and reporting requirements.

(6) Transcript of the public hearing on the State plan.

(7) Provision for State progress reports to EPA.

(8) Identification of enforceable State mechanisms that you selected for implementing the emission guidelines of this subpart.

(9) Demonstration of your State's legal authority to carry out the sections 111(d) and 129 in your State plan.

(b) Your State plan may deviate from the format and content of the emission guidelines contained in this subpart. However, if your State plan does deviate, you must demonstrate that your State plan is at least as protective as the emission guidelines contained in this subpart. Your State plan must address regulatory applicability, compliance schedule, operator training and qualification, a waste management plan, emission limitations, stack testing, operating parameter requirements, monitoring, recordkeeping and reporting, and air curtain incinerator requirements.

(c) You must follow the requirements of subpart B of this part (Adoption and Submittal of State Plans for Designated Facilities) in your State plan.

§ 60.2984 Is there an approval process for my State plan?

Yes, EPA will review your State plan according to § 60.27.

§ 60.2985 What if my State plan is not approvable?

If you do not submit an approvable State plan (or a negative declaration

letter) by December 17, 2007, EPA will develop a Federal plan according to § 60.27 to implement the emission guidelines contained in this subpart. Owners and operators of incineration units not covered by an approved State plan must comply with the Federal plan. The Federal plan is an interim action and applies to units until a State plan covering those units is approved and becomes effective.

§ 60.2986 Is there an approval process for a negative declaration letter?

No, EPA has no formal review process for negative declaration letters. Once we receive your negative declaration letter, we will place a copy in the public docket and publish a notice in the FEDERAL REGISTER. If, at a later date, an existing incineration unit is found in your State, the Federal plan implementing the emission guidelines contained in this subpart would automatically apply to that unit until your State plan is approved.

§ 60.2987 What compliance schedule must I include in my State plan?

Your State plan must include compliance schedules that require OSWI units and air curtain incinerators subject to this subpart as described in § 60.2994(b) to achieve final compliance as expeditiously as practicable after approval of the State plan but not later than the earlier of the following two dates:

(a) December 16, 2010.

(b) Three years after the effective date of State plan approval.

§ 60.2988 Are there any State plan requirements for this subpart that apply instead of the requirements specified in subpart B of this part?

Yes, subpart B of this part establishes general requirements for developing and processing section 111(d) plans. This subpart applies instead of the requirements in subpart B of this part for the following:

(a) State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all OSWI units and air curtain incinerators subject to this subpart as described in § 60.2994(b) to comply by December 16, 2010 or 3 years after the effective date of State plan approval, whichever is sooner. This applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in § 60.24(f).

(b) State plans developed to implement this subpart are required to include only one increment of progress for the affected incineration units. This increment is the final compliance date in § 60.21(h)(5). This applies instead of the requirement of § 60.24(e)(1).

§ 60.2989 Does this subpart directly affect incineration unit owners and operators in my State?

(a) No, this subpart does not directly affect incineration unit owners and operators in your State. However, unit owners and operators must comply with the State plan you develop to implement the emission guidelines contained in this subpart.

(b) If you do not submit an approvable plan to implement and enforce the guidelines contained in this subpart by December 17, 2007, EPA will implement and enforce a Federal plan, as provided in § 60.2985, to ensure that each unit within your State reaches compliance with all the provisions of this subpart by December 16, 2010.

§ 60.2990 What Authorities are withheld by EPA?

The following authorities are withheld by EPA and not transferred to the State, local or tribal agency:

(1) Approval of alternatives to the emission limitations in table 2 of this subpart and operating limits established under § 60.3023 and table 3 of this subpart.

(2) Approval of petitions for specific operating limits in § 60.3024.

(3) Approval of major alternatives to test methods.

(4) Approval of major alternatives to monitoring.

(5) Approval of major alternatives to recordkeeping and reporting.

(6) The status report requirements in § 60.3020(c)(2).

APPLICABILITY OF STATE PLANS

§ 60.2991 What incineration units must I address in my State plan?

Your State plan must address all incineration units in your State that meet all the requirements specified in paragraphs (a) through (c) of this section.

(a) The incineration unit is an existing incineration unit as defined in § 60.2992.

(b) The incineration unit is an OSWI unit as defined in § 60.3078 or an air curtain incinerator subject to this subpart as described in § 60.2994(b). OSWI units are very small municipal waste combustion units and institutional waste incineration units as defined in § 60.3078.

(c) The incineration unit is not excluded under § 60.2993.

§ 60.2992 What is an existing incineration unit?

An existing incineration unit is an OSWI unit or air curtain incinerator subject to this subpart that commenced construction on or before December 9, 2004, except as provided in paragraph (a) of this section.

(a) If the owner or operator of an incineration unit makes changes that meet the definition of modification or reconstruction on or after June 16, 2006, the unit becomes subject to subpart EEEE of this part (New Source Performance Standards for Other Solid Waste Incineration Units) and the State plan no longer applies to that unit.

(b) If the owner or operator of an existing incineration unit makes physical or operational changes to the unit primarily to comply with the State plan, then subpart EEEE of this part does not apply to that unit. Such changes do not qualify as modifications or reconstructions under subpart EEEE of this part.

§ 60.2993 Are any combustion units excluded from my State plan?

This subpart excludes the types of units described in paragraphs (a) through (q) of this section, as long as the owner/operator meets the requirements of this section.

(a) *Cement kilns*. The unit is excluded if it is regulated under subpart LLL of part 63 of this chapter (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry).

(b) *Co-fired combustors*. The unit, that would otherwise be considered a very small municipal waste combustion unit, is excluded if the owner/operator of the unit meets the five requirements specified in paragraphs (b)(1) through (5) of this section.

(1) Has a Federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.

(2) Notifies the Administrator that the unit qualifies for the exclusion.

(3) Provides the Administrator with a copy of the Federally enforceable permit.

(4) Records the weights, each calendar quarter, of municipal solid waste and of all other fuels combusted.

(5) Keeps each report for 5 years. These records must be kept on site for at least 2 years, but may be kept off site for the remaining 3 years.

(c) *Cogeneration facilities*. The unit is excluded if it meets the three requirements specified in paragraphs (c)(1) through (3) of this section.

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) The owner/operator of the unit notifies the Administrator that the unit meets all of these criteria.

(d) *Commercial and industrial solid waste incineration units*. The unit is excluded if it is regulated under subparts CCCC or DDDD of this part or subpart III of part 62 and is required to meet the emission limitations established in those subparts.

(e) *Hazardous waste combustion units*. The unit is excluded if it meets either of the two criteria specified in paragraph (e)(1) or (2) of this section.

(1) The owner/operator of the unit is required to get a permit for the unit

under section 3005 of the Solid Waste Disposal Act.

(2) The unit is regulated under 40 CFR part 63, subpart EEE (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors).

(f) *Hospital/medical/infectious waste incinerators*. The unit is excluded if it is regulated under subparts Ce or Ec of this part (New Source Performance Standards and Emission Guidelines for Hospital/Medical/Infectious Waste Incinerators) or subpart HHH of part 62 (Federal Plan for Hospital/Medical/Infectious Waste Incinerators constructed on or before June 20, 1996).

(g) *Incinerators and air curtain incinerators in isolated areas of Alaska*. The incineration unit is excluded if it is used at a solid waste disposal site in Alaska that is classified as a Class II or Class III municipal solid waste landfill, as defined in § 60.3078.

(h) *Rural institutional waste incinerators*. The incineration unit is excluded if it is an institutional waste incinerator, as defined in § 60.3078, and the application for exclusion described in paragraphs (h)(1) and (2) of this section has been approved by the Administrator.

(1) Prior to 1 year before the final compliance date, an application and supporting documentation demonstrating that the institutional waste incineration unit meets the two requirements specified in paragraphs (h)(1)(i) and (ii) of this section must be submitted to the Administrator for approval.

(i) The unit is located more than 50 miles from the boundary of the nearest Metropolitan Statistical Area,

(ii) Alternative disposal options are not available or are economically infeasible.

(2) The application described in paragraph (h)(1) of this section must be revised and resubmitted to the Administrator for approval every 5 years following the initial approval of the exclusion for your unit.

(3) If you re-applied for an exclusion pursuant to paragraph (h)(2) of this section and were denied exclusion by the Administrator, you have 3 years from the expiration date of the current exclusion to comply with the emission limits and all other applicable requirements of this subpart.

(i) *Institutional boilers and process heaters*. The unit is excluded if it is regulated under 40 CFR part 63, subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters).

(j) *Laboratory Analysis Units*. The unit is excluded if it burns samples of materials only for the purpose of chemical or physical analysis.

(k) *Materials recovery units*. The unit is excluded if it combusts waste for the primary purpose of recovering metals. Examples include primary and secondary smelters.

(l) *Pathological waste incineration units*. The institutional waste incineration unit or very small municipal waste combustion unit is excluded from this subpart if it burns 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in § 60.3078 and the owner/operator of the unit notifies the Administrator that the unit meets these criteria.

(m) *Small or large municipal waste combustion units*. The unit is excluded if it is regulated under subparts AAAA, BBBB, Ea, Eb, or Cb, of this part or subparts FFF or JJJ of part 62 and is required to meet the emission limitations established in those subparts.

(n) *Small power production facilities*. The unit is excluded if it meets the three requirements specified in paragraphs (n)(1) through (3) of this section.

(1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) The owner/operator of the unit notifies the Administrator that the unit meets all of these criteria.

(o) *Temporary-use incinerators and air curtain incinerators used in disaster recovery*. The incineration unit is excluded if it is used on a temporary basis to combust debris from a disaster

or emergency such as a tornado, hurricane, flood, ice storm, high winds, or act of bioterrorism and you comply with the requirements in § 60.3061.

(p) *Units that combust contraband or prohibited goods.* The incineration unit is excluded if the unit is owned or operated by a government agency such as police, customs, agricultural inspection, or a similar agency to destroy only illegal or prohibited goods such as illegal drugs, or agricultural food products that can not be transported into the country or across state lines to prevent biocontamination. The exclusion does not apply to items either confiscated or incinerated by private, industrial, or commercial entities.

(q) *Incinerators used for national security.* Your incineration unit is excluded if it meets the requirements specified in either (q)(1) or (2) of this section.

(1) The incineration unit is used solely during military training field exercises to destroy national security materials integral to the field exercises.

(2) The incineration unit is used solely to incinerate national security materials, its use is necessary to safeguard national security, you follow the exclusion request requirements in paragraphs (q)(2)(i) and (ii) of this section, and the Administrator has approved your request for exclusion.

(i) The request for exclusion and supporting documentation must demonstrate both that the incineration unit is used solely to destroy national security materials and that a reliable alternative to incineration that ensures acceptable destruction of national security materials is unavailable, on either a permanent or temporary basis.

(ii) The request for exclusion must be submitted to the Administrator prior to 1 year before the final compliance date.

§ 60.2994 Are air curtain incinerators regulated under this subpart?

(a) Air curtain incinerators that burn less than 35 tons per day of municipal solid waste or air curtain incinerators located at institutional facilities burning any amount of institutional waste generated at that facility are subject to all requirements of this subpart, including the emission limitations specified in table 2 of this subpart.

(b) Air curtain incinerators that burn only less than 35 tons per day of the materials listed in paragraphs (b)(1) through (4) of this section collected from the general public and from residential, commercial, institutional, and industrial sources; or, air curtain incinerators located at institutional facilities that burn only the materials listed in paragraphs (b)(1) through (4) of this section generated at that facility, are required to meet only the requirements in §§ 60.3062 through 60.3069 and are exempt from all other requirements of this subpart.

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent yard waste.

(4) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

MODEL RULE—USE OF MODEL RULE

§ 60.2996 What is the purpose of the "model rule" in this subpart?

(a) The model rule provides the emission guidelines requirements in a standard regulation format. You must develop a State plan that is at least as protective as the model rule. You may use the model rule language as part of your State plan. Alternative language may be used in your State plan if you demonstrate that the alternative language is at least as protective as the model rule contained in this subpart.

(b) In the ''model rule'' of §§ 60.3000 through 60.3078, ''you'' means the owner or operator of an OSWI unit or air curtain incinerator subject to this subpart.

§ 60.2997 How does the model rule relate to the required elements of my State plan?

Use the model rule to satisfy the State plan requirements specified in § 60.2983(a)(4) and (5).

§ 60.2998 What are the principal components of the model rule?

The model rule contains nine major components, as follows:

(a) Compliance schedule.

(b) Waste management plan.

(c) Operator training and qualification.

(d) Emission limitations and operating limits.

(e) Performance testing.

(f) Initial compliance requirements.

(g) Continuous compliance requirements.

(h) Monitoring.

(i) Recordkeeping and reporting.

MODEL RULE—COMPLIANCE SCHEDULE

§ 60.3000 When must I comply?

Table 1 of this subpart specifies the final compliance date. You must submit a notification to the Administrator stating whether final compliance has been achieved, postmarked within 10 business days after the final compliance date in table 1 of this subpart.

§ 60.3001 What must I do if I close my OSWI unit and then restart it?

(a) If you close your OSWI unit but will reopen it prior to the final compliance date in your State plan, you must meet the final compliance date specified in table 1 of this subpart.

(b) If you close your OSWI unit but will restart it after your final compliance date, you must complete emission control retrofit and meet the emission limitations on the date your OSWI unit restarts operation. You must conduct your initial performance test within 30 days of restarting your OSWI unit.

§ 60.3002 What must I do if I plan to permanently close my OSWI unit and not restart it?

You must close the unit before the final compliance date specified in table 1 of this subpart.

MODEL RULE—WASTE MANAGEMENT PLAN

§ 60.3010 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§ 60.3011 When must I submit my waste management plan?

You must submit a waste management plan no later than 60 days following the initial performance test as specified in table 5 of this subpart. Section 60.3031 specifies the date by which you are required to conduct your performance test.

§ 60.3012 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures and implement those measures the source considers practical and feasible, considering the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

§ 60.3014 What are the operator training and qualification requirements?

(a) No OSWI unit can be operated unless a fully trained and qualified OSWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified OSWI unit operator may operate the OSWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified OSWI unit operators are temporarily not accessible, you must follow the procedures in § 60.3020.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (3) of this section.

(1) Training on the 13 subjects listed in paragraphs (c)(1)(i) through (xiii) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Methods to monitor pollutants (including monitoring of incinerator and control device operating parameters) and monitoring equipment calibration procedures, where applicable.

(viii) Actions to correct malfunctions or conditions that may lead to malfunction.

(ix) Bottom and fly ash characteristics and handling procedures.

(x) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(xi) Pollution prevention.

(xii) Waste management practices.

(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that may serve as reference material following completion of the course.

§ 60.3015 When must the operator training course be completed?

The operator training course must be completed by the latest of the three dates specified in paragraphs (a) through (c) of this section.

(a) The final compliance date specified in table 1 of this subpart.

(b) Six months after your OSWI unit startup.

(c) Six months after an employee assumes responsibility for operating the OSWI unit or assumes responsibility for supervising the operation of the OSWI unit.

§ 60.3016 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.3014(c).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.3014(c)(2).

§ 60.3017 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.

(c) Inspection and maintenance.

(d) Responses to malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

§ 60.3018 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.3017.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.3016(a).

§ 60.3019 What site-specific documentation is required?

(a) Documentation must be available at the facility and readily accessible for all OSWI unit operators that addresses the nine topics described in paragraphs (a)(1) through (9) of this section. You must maintain this information and the training records required by paragraph (c) of this section in a manner that they can be readily accessed and are suitable for inspection upon request.

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Monitoring procedures for demonstrating compliance with the operating limits established under this subpart.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§ 60.3010 through 60.3012.

(9) Procedures for handling ash.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted by the latest of three dates specified in paragraphs (b)(1)(i) through (iii) of this section.

(i) The final compliance date specified in table 1 of this subpart.

(ii) Six months after your OSWI unit startup.

(iii) Six months after an employee assumes responsibility for operating the OSWI unit or assumes responsibility for supervising the operation of the OSWI unit.

(2) Subsequent annual reviews of the information listed in paragraph (a) of this section must be conducted not later than 12 months following the previous review.

(c) You must also maintain the information specified in paragraphs (c)(1) through (3) of this section.

(1) Records showing the names of OSWI unit operators who have completed review of the information in paragraph (a) of this section as required by paragraph (b) of this section, including the date of the initial review and all subsequent annual reviews.

(2) Records showing the names of the OSWI unit operators who have completed the operator training requirements under § 60.3014, met the criteria for qualification under § 60.3016, and maintained or renewed their qualification under § 60.3017 or § 60.3018. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

§ 60.3020 What if all the qualified operators are temporarily not accessible?

If all qualified operators are temporarily not accessible (*i.e.*, not at the facility and not able to be at the facility within 1 hour), you must meet one of the three criteria specified in paragraphs (a) through (c) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When all qualified operators are not accessible for 12 hours or less, the OSWI unit may be operated by other plant personnel familiar with the operation of the OSWI unit who have completed review of the information specified in § 60.3019(a) within the past 12 months. You do not need to notify the Administrator or include this as a deviation in your annual report.

(b) When all qualified operators are not accessible for more than 12 hours, but less than 2 weeks, the OSWI unit may be operated by other plant personnel familiar with the operation of the OSWI unit who have completed a review of the information specified in § 60.3019(a) within the past 12 months. However, you must record the period when all qualified operators were not accessible and include this deviation in the annual report as specified under § 60.3051.

(c) When all qualified operators are not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (c)(1) and (2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to EPA every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible and requesting approval from EPA to continue operation of the OSWI unit. You must submit the first

status report 4 weeks after you notify the Administrator of the deviation under paragraph (c)(1) of this section. If EPA notifies you that your request to continue operation of the OSWI unit is disapproved, the OSWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if you meet the two requirements in paragraphs (c)(2)(i) and (ii) of this section.

(i) A qualified operator is accessible as required under § 60.3014(a).

(ii) You notify EPA that a qualified operator is accessible and that you are resuming operation.

MODEL RULE—EMISSION LIMITATIONS AND OPERATING LIMITS

§ 60.3022 What emission limitations must I meet and by when?

You must meet the emission limitations specified in table 2 of this subpart on the date the initial performance test is required or completed (whichever is earlier). Section 60.3031 specifies the date by which you are required to conduct your performance test.

§ 60.3023 What operating limits must I meet and by when?

(a) If you use a wet scrubber to comply with the emission limitations, you must establish operating limits for four operating parameters (as specified in table 3 of this subpart) as described in paragraphs (a)(1) through (4) of this section during the initial performance test.

(1) Maximum charge rate, calculated using one of the two different procedures in paragraphs (a)(1)(i) or (ii) of this section, as appropriate.

(i) For continuous and intermittent units, maximum charge rate is the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(ii) For batch units, maximum charge rate is the charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(2) Minimum pressure drop across the wet scrubber, which is calculated as the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the wet scrubber, which is calculated as the average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(3) Minimum scrubber liquor flow rate, which is calculated as the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(4) Minimum scrubber liquor pH, which is calculated as the average liquor pH at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with the hydrogen chloride and sulfur dioxide emission limitations.

(b) You must meet the operating limits established during the initial performance test beginning on the date 180 days after your final compliance date in table 1 of this subpart.

§ 60.3024 What if I do not use a wet scrubber to comply with the emission limitations?

If you use an air pollution control device other than a wet scrubber or limit emissions in some other manner to comply with the emission limitations under § 60.3022, you must petition EPA for specific operating limits, the values of which are to be established during the initial performance test and then continuously monitored thereafter. You must not conduct the initial performance test until after the petition has been approved by EPA. Your petition must include the five items listed in paragraphs (a) through (e) of this section.

(a) Identification of the specific parameters you propose to use as operating limits.

(b) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants.

(c) A discussion of how you will establish the upper and/or lower values for these parameters that will establish the operating limits on these parameters.

(d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

§ 60.3025 What happens during periods of startup, shutdown, and malfunction?

The emission limitations and operating limits apply at all times except during OSWI unit startups, shutdowns, or malfunctions.

MODEL RULE—PERFORMANCE TESTING

§ 60.3027 How do I conduct the initial and annual performance test?

(a) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) All performance tests must be conducted using the methods in table 2 of this subpart.

(c) All performance tests must be conducted using the minimum run duration specified in table 2 of this subpart.

(d) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(e) Method 3A or 3B of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B of appendix A of this part must be used simultaneously with each method.

(f) All pollutant concentrations, except for opacity, must be adjusted to 7 percent oxygen using Equation 1 in § 60.3076.

(g) Method 26A of appendix A of this part must be used for hydrogen chloride concentration analysis, with the additional requirements specified in paragraphs (g)(1) through (3) of this section.

(1) The probe and filter must be conditioned prior to sampling using the procedure described in paragraphs (g)(1)(i) through (iii) of this section.

(i) Assemble the sampling train(s) and conduct a conditioning run by collecting between 14 liters per minute (0.5 cubic feet per minute) and 30 liters per minute (1.0 cubic feet per minute) of gas over a 1-hour period. Follow the sampling procedures outlined in section 8.1.5 of Method 26A of appendix A of this part. For the conditioning run, water can be used as the impinger solution.

(ii) Remove the impingers from the sampling train and replace with a fresh impinger train for the sampling run, leaving the probe and filter (and cyclone, if used) in position. Do not recover the filter or rinse the probe before the first run. Thoroughly rinse the impingers used in the preconditioning run with deionized water and discard these rinses.

(iii) The probe and filter assembly are conditioned by the stack gas and are not recovered or cleaned until the end of testing.

(2) For the duration of sampling, a temperature around the probe and filter (and cyclone, if used) between 120 °C (248 °F) and 134 °C (273 °F) must be maintained.

(3) If water droplets are present in the sample gas stream, the requirements specified in paragraphs (g)(3)(i) and (ii) of this section must be met.

(i) The cyclone described in section 6.1.4 of Method 26A of appendix A of this part must be used.

(ii) The post-test moisture removal procedure described in section 8.1.6 of Method 26A of appendix A of this part must be used.

§ 60.3028 How are the performance test data used?

You use results of performance tests to demonstrate compliance with the emission limitations in table 2 of this subpart.

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

§ 60.3030 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?

You must conduct an initial performance test, as required under § 60.8, to determine compliance with the emission limitations in table 2 of this subpart and to establish operating limits using the procedure in § 60.3023 or § 60.3024. The initial performance test must be conducted using the test methods listed in table 2 of this subpart and the procedures in § 60.3027.

§ 60.3031 By what date must I conduct the initial performance test?

The initial performance test must be conducted no later than 180 days after your final compliance date. Your final compliance date is specified in table 1 of this subpart.

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.3033 How do I demonstrate continuous compliance with the emission limitations and the operating limits?

(a) You must conduct an annual performance test for all of the pollutants in table 2 of this subpart for each OSWI unit to determine compliance with the emission limitations. The annual performance test must be conducted using the test methods listed in table 2 of this subpart and the procedures in § 60.3027.

(b) You must continuously monitor carbon monoxide emissions to determine compliance with the carbon monoxide emissions limitation. Twelve-hour rolling average values are used to determine compliance. A 12-hour rolling average value above the carbon monoxide emission limit in table 2 constitutes a deviation from the emission limitation.

(c) You must continuously monitor the operating parameters specified in § 60.3023 or established under § 60.3024. Three-hour rolling average values are used to determine compliance with the operating limits unless a different averaging period is established under § 60.3024. A 3-hour rolling average value (unless a different averaging period is established under § 60.3024) above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Operating limits do not apply during performance tests.

§ 60.3034 By what date must I conduct the annual performance test?

You must conduct annual performance tests within 12 months following the initial performance test. Conduct subsequent annual performance tests within 12 months following the previous one.

§ 60.3035 May I conduct performance testing less often?

(a) You can test less often for a given pollutant if you have test data for at least three consecutive annual tests, and all performance tests for the pollutant over that period show that you comply with the emission limitation. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the 3rd year and no more than 36 months following the previous performance test.

(b) If your OSWI unit continues to meet the emission limitation for the pollutant, you may choose to conduct performance tests for that pollutant every 3rd year, but each test must be within 36 months of the previous performance test.

(c) If a performance test shows a deviation from an emission limitation for any pollutant, you must conduct annual performance tests for that pollutant until three consecutive annual performance tests for that pollutant all show compliance.

§ 60.3036 May I conduct a repeat performance test to establish new operating limits?

Yes, you may conduct a repeat performance test at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.

MODEL RULE—MONITORING

§ 60.3038 What continuous emission monitoring systems must I install?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for carbon monoxide and for oxygen. You must monitor the oxygen concentration at each location where you monitor carbon monoxide.

(b) You must install, evaluate, and operate each continuous emission monitoring system according to the ''Monitoring Requirements'' in § 60.13.

§ 60.3039 How do I make sure my continuous emission monitoring systems are operating correctly?

(a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure carbon monoxide and oxygen.

(b) Complete your initial evaluation of the continuous emission monitoring systems within 180 days after your final compliance date in table 1 of this subpart.

(c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your carbon monoxide and oxygen continuous emission monitoring systems. To validate carbon monoxide concentration levels, use EPA Method 10, 10A, or 10B of appendix A of this part. Use EPA Method 3 or 3A to measure oxygen. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. table 4 of this subpart shows the required span values and performance specifications that apply to each continuous emission monitoring system.

(d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

§ 60.3040 What is my schedule for evaluating continuous emission monitoring systems?

(a) Conduct annual evaluations of your continuous emission monitoring systems no more than 12 months after the previous evaluation was conducted.

(b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.3041 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems, and is the data collection requirement enforceable?

(a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for carbon monoxide are in parts per million by dry volume at 7 percent oxygen. Use the 1-hour averages of oxygen data from your continuous emission monitoring system to determine the actual oxygen level and to calculate emissions at 7 percent oxygen.

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

(c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for at least 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal or institutional solid waste.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you have deviated from the data collection requirement regardless of the emission level monitored.

(e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations.

(f) If continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements, refer to table 4 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

§ 60.3042 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?

(a) Use Equation 1 in § 60.3076 to calculate emissions at 7 percent oxygen.

(b) Use Equation 2 in § 60.3076 to calculate the 12-hour rolling averages for concentrations of carbon monoxide.

§ 60.3043 What operating parameter monitoring equipment must I install, and what operating parameters must I monitor?

(a) If you are using a wet scrubber to comply with the emission limitations under § 60.3022, you must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in table 3 of this subpart. These devices (or methods) must measure and record the values for these operating parameters at the frequencies indicated in table 3 of this subpart at all times.

(b) You must install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of any stack that could be used to bypass the control device. The measurement must include the date, time, and duration of the use of the bypass stack.

(c) If you are using a method or air pollution control device other than a wet scrubber to comply with the emission limitations under § 60.3022, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in § 60.3024.

§ 60.3044 Is there a minimum amount of operating parameter monitoring data I must obtain?

(a) Except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), you must conduct all monitoring at all times the OSWI unit is operating.

(b) You must obtain valid monitoring data for at least 75 percent of the operating hours per day for at least 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal or institutional solid waste.

(c) If you do not obtain the minimum data required in paragraphs (a) and (b) of this section, you have deviated from the data collection requirement regardless of the operating parameter level monitored.

(d) Do not use data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities for meeting the requirements of this subpart, including data averages and calculations. You must use all the data collected during all other periods in assessing compliance with the operating limits.

MODEL RULE—RECORDKEEPING AND REPORTING

§ 60.3046 What records must I keep?

You must maintain the 14 items (as applicable) as specified in paragraphs (a) through (n) of this section for a period of at least 5 years.

(a) Calendar date of each record.

(b) Records of the data described in paragraphs (b)(1) through (8) of this section.

(1) The OSWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet every 15 minutes of operation, as applicable.

(3) Pressure drop across the wet scrubber system every 15 minutes of operation or amperage to the wet scrubber every 15 minutes of operation, as applicable.

(4) Liquor pH as introduced to the wet scrubber every 15 minutes of operation, as applicable.

(5) For OSWI units that establish operating limits for controls other than wet scrubbers under § 60.3024, you must maintain data collected for all operating parameters used to determine compliance with the operating limits.

(6) All 1-hour average concentrations of carbon monoxide emissions.

(7) All 12-hour rolling average values of carbon monoxide emissions and all 3-

hour rolling average values of continuously monitored operating parameters.

(8) Records of the dates, times, and durations of any bypass of the control device.

(c) Identification of calendar dates and times for which continuous emission monitoring systems or monitoring systems used to monitor operating limits were inoperative, inactive, malfunctioning, or out of control (except for downtime associated with zero and span and other routine calibration checks). Identify the pollutant emissions or operating parameters not measured, the duration, reasons for not obtaining the data, and a description of corrective actions taken.

(d) Identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken.

(e) Identification of calendar dates and times for which monitoring data show a deviation from the carbon monoxide emissions limit in table 2 of this subpart or a deviation from the operating limits in table 3 of this subpart or a deviation from other operating limits established under § 60.3024 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

(f) Calendar dates when continuous monitoring systems did not collect the minimum amount of data required under §§ 60.3041 and 60.3044.

(g) For carbon monoxide continuous emissions monitoring systems, document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part.

(h) Records of the calibration of any monitoring devices required under § 60.3043.

(i) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations and a description of the types of waste burned during the test.

(j) Records showing the names of OSWI unit operators who have completed review of the information in § 60.3019(a) as required by § 60.3019(b), including the date of the initial review and all subsequent annual reviews.

(k) Records showing the names of the OSWI unit operators who have completed the operator training requirements under § 60.3014, met the criteria for qualification under § 60.3016, and maintained or renewed their qualification under § 60.3017 or § 60.3018. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(l) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

(m) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

(n) The information listed in § 60.3019(a).

§ 60.3047 Where and in what format must I keep my records?

(a) You must keep each record on site for at least 2 years. You may keep the records off site for the remaining 3 years.

(b) All records must be available in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§ 60.3048 What reports must I submit?

See table 5 of this subpart for a summary of the reporting requirements.

§ 60.3049 What information must I submit following my initial performance test?

You must submit the information specified in paragraphs (a) through (c) of this section no later than 60 days following the initial performance test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial performance test results obtained under § 60.3030, as applicable.

(b) The values for the site-specific operating limits established in § 60.3023 or § 60.3024.

(c) The waste management plan, as specified in §§ 60.3010 through 60.3012.

§ 60.3050 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in § 60.3049. You must submit subsequent reports no more than 12 months following the previous report.

§ 60.3051 What information must I include in my annual report?

The annual report required under § 60.3050 must include the ten items listed in paragraphs (a) through (j) of this section. If you have a deviation from the operating limits or the emission limitations, you must also submit deviation reports as specified in §§ 60.3052 through 60.3054.

(a) Company name and address.

(b) Statement by the owner or operator, with their name, title, and signature, certifying the truth, accuracy, and completeness of the report. Such certifications must also comply with the requirements of 40 CFR 70.5(d) or 40 CFR 71.5(d).

(c) Date of report and beginning and ending dates of the reporting period.

(d) The values for the operating limits established pursuant to § 60.3023 or § 60.3024.

(e) If no deviation from any emission limitation or operating limit that applies to you has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period, and that no monitoring system used to determine compliance with the emission limitations or operating limits was inoperative, inactive, malfunctioning or out of control.

(f) The highest recorded 12-hour average and the lowest recorded 12-hour average, as applicable, for carbon monoxide emissions and the highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported.

(g) Information recorded under § 60.3046(b)(6) and (c) through (e) for the calendar year being reported.

(h) If a performance test was conducted during the reporting period, the results of that test.

(i) If you met the requirements of § 60.3035(a) or (b), and did not conduct a performance test during the reporting period, you must state that you met the requirements of § 60.3035(a) or (b), and, therefore, you were not required to conduct a performance test during the reporting period.

(j) Documentation of periods when all qualified OSWI unit operators were unavailable for more than 12 hours, but less than 2 weeks.

§ 60.3052 What else must I report if I have a deviation from the operating limits or the emission limitations?

(a) You must submit a deviation report if any recorded 3-hour average parameter level is above the maximum operating limit or below the minimum operating limit established under this subpart, if any recorded 12-hour average carbon monoxide emission rate is above the emission limitation, if the control device was bypassed, or if a performance test was conducted that showed a deviation from any emission limitation.

(b) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

§ 60.3053 What must I include in the deviation report?

In each report required under § 60.3052, for any pollutant or operating parameter that deviated from the emission limitations or operating limits specified in this subpart, include the seven items described in paragraphs (a) through (g) of this section.

(a) The calendar dates and times your unit deviated from the emission limitations or operating limit requirements.

(b) The averaged and recorded data for those dates.

(c) Durations and causes of each deviation from the emission limitations or operating limits and your corrective actions.

(d) A copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels.

(e) The dates, times, number, duration, and causes for monitor downtime incidents (other than downtime associated with zero, span, and other routine calibration checks).

(f) Whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period.

(g) The dates, times, and durations of any bypass of the control device.

§ 60.3054 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?

(a) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (a)(1) and (2) of this section.

(1) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (a)(1)(i) through (iii) of this section.

(i) A statement of what caused the deviation.

(ii) A description of what you are doing to ensure that a qualified operator is accessible.

(iii) The date when you anticipate that a qualified operator will be available.

(2) Submit a status report to EPA every 4 weeks that includes the three items in paragraphs (a)(2)(i) through (iii) of this section.

(i) A description of what you are doing to ensure that a qualified operator is accessible.

(ii) The date when you anticipate that a qualified operator will be accessible.

(iii) Request approval from EPA to continue operation of the OSWI unit.

(b) If your unit was shut down by EPA, under the provisions of § 60.3020(c)(2), due to a failure to provide an accessible qualified operator, you must notify EPA that you are resuming operation once a qualified operator is accessible.

§ 60.3055 Are there any other notifications or reports that I must submit?

Yes, you must submit notifications as provided by § 60.7.

§ 60.3056 In what form can I submit my reports?

Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

§ 60.3057 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

MODEL RULE—TITLE V OPERATING PERMITS

§ 60.3059 Am I required to apply for and obtain a title V operating permit for my unit?

Yes, if you are subject to an applicable EPA-approved and effective Clean Air Act section 111(d)/129 State or Tribal plan or an applicable and effective Federal plan, you are required to apply for and obtain a title V operating permit unless you meet the relevant requirements for an exemption specified in § 60.2993.

§ 60.3060 When must I submit a title V permit application for my existing unit?

(a)(1) If your existing unit is not subject to an earlier permit application deadline, a complete title V permit application must be submitted on or before the earlier of the dates specified in paragraphs (a)(1)(i) through (iii) of this section. (See sections 129(e), 503(c), 503(d), and 502(a) of the Clean Air Act and 40 CFR 70.5(a)(1)(i) and 40 CFR 71.5(a)(1)(i).)

(i) 12 months after the effective date of any applicable EPA-approved Clean Air Act section 111(d)/129 State or Tribal plan.

(ii) 12 months after the effective date of any applicable Federal plan.

(iii) December 16, 2008.

(2) For any existing unit not subject to an earlier permit application deadline, the application deadline of 36 months after the promulgation of 40 CFR part 60, subpart FFFF, applies regardless of whether or when any applicable Federal plan is effective, or whether or when any applicable Clean

Air Act section 111(d)/129 State or Tribal plan is approved by EPA and becomes effective.

(b) If your existing unit is subject to title V as a result of some triggering requirement(s) other than those specified in paragraph (a) of this section (for example, a unit may be a major source or part of a major source), then your unit may be required to apply for a title V permit prior to the deadlines specified in paragraph (a). If more than one requirement triggers a source's obligation to apply for a title V permit, the 12-month timeframe for filing a title V permit application is triggered by the requirement which first causes the source to be subject to title V. (See section 503(c) of the Clean Air Act and 40 CFR 70.3(a) and (b), 40 CFR 70.5(a)(1)(i), 40 CFR 71.3(a) and (b), and 40 CFR 71.5(a)(1)(i).)

(c) A ''complete'' title V permit application is one that has been determined or deemed complete by the relevant permitting authority under section 503(d) of the Clean Air Act and 40 CFR 70.5(a)(2) or 40 CFR 71.5(a)(2). You must submit a complete permit application by the relevant application deadline in order to operate after this date in compliance with Federal law. (See sections 503(d) and 502(a) of the Clean Air Act and 40 CFR 70.7(b) and 40 CFR 71.7(b).)

MODEL RULE—TEMPORARY-USE INCINERATORS AND AIR CURTAIN INCINERATORS USED IN DISASTER RECOVERY

§ 60.3061 What are the requirements for temporary-use incinerators and air curtain incinerators used in disaster recovery?

Your incinerator or air curtain incinerator is excluded from the requirements of this subpart if it is used on a temporary basis to combust debris from a disaster or emergency such as a tornado, hurricane, flood, ice storm, high winds, or act of bioterrorism. To qualify for this exclusion, the incinerator or air curtain incinerator must be used to combust debris in an area declared a State of Emergency by a local or State government, or the President, under the authority of the Stafford Act, has declared that an emergency or a major disaster exists in the area, and you must follow the requirements specified in paragraphs (a) through (c) of this section.

(a) If the incinerator or air curtain incinerator is used during a period that begins on the date the unit started operation and lasts 8 weeks or less within the boundaries of the same emergency or disaster declaration area, then it is excluded from the requirements of this subpart. You do not need to notify the Administrator of its use or meet the emission limitations or other requirements of this subpart.

(b) If the incinerator or air curtain incinerator will be used during a period that begins on the date the unit started operation and lasts more than 8 weeks within the boundaries of the same emergency or disaster declaration area, you must notify the Administrator that the temporary-use incinerator or air curtain incinerator will be used for more than 8 weeks and request permission to continue to operate the unit as specified in paragraphs (b)(1) and (2) of this section.

(1) The notification must be submitted in writing by the date 8 weeks after you start operation of the temporary-use incinerator or air curtain incinerator within the boundaries of the current emergency or disaster declaration area.

(2) The notification must contain the date the incinerator or air curtain incinerator started operation within the boundaries of the current emergency or disaster declaration area, identification of the disaster or emergency for which the incinerator or air curtain incinerator is being used, a description of the types of materials being burned in the incinerator or air curtain incinerator, a brief description of the size and design of the unit (for example, an air curtain incinerator or a modular starved-air incinerator), the reasons the incinerator or air curtain incinerator must be operated for more than 8 weeks, and the amount of time for which you request permission to operate including the date you expect to cease operation of the unit.

(c) If you submitted the notification containing the information in paragraph (b)(2) by the date specified in paragraph (b)(1), you may continue to operate the incinerator or air curtain incinerator for another 8 weeks, which

is a total of 16 weeks from the date the unit started operation within the boundaries of the current emergency or disaster declaration area. You do not have to meet the emission limitations or other requirements of this subpart during this period.

(1) At the end of 16 weeks from the date the incinerator or air curtain incinerator started operation within the boundaries of the current emergency or disaster declaration area, you must cease operation of the unit or comply with all requirements of this subpart, unless the Administrator has approved in writing your request to continue operation.

(2) If the Administrator has approved in writing your request to continue operation, then you may continue to operate the incinerator or air curtain incinerator within the boundaries of the current emergency or disaster declaration area until the date specified in the approval, and you do not need to comply with any other requirements of this subpart during the approved time period.

MODEL RULE—AIR CURTAIN INCINERATORS THAT BURN ONLY WOOD WASTE, CLEAN LUMBER, AND YARD WASTE

§ 60.3062 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open, integrated combustion chamber (fire box) or open pit or trench (trench burner) in which combustion occurs. For the purpose of this subpart and subpart EEEE of this part only, air curtain incinerators include both firebox and trench burner units.

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (4) of this section are required to meet only the requirements in §§ 60.3062 through 60.3069 and are exempt from all other requirements of this subpart.

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent yard waste.

(4) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.3063 When must I comply if my air curtain incinerator burns only wood waste, clean lumber, and yard waste?

Table 1 of this subpart specifies the final compliance date. You must submit a notification to the Administrator postmarked within 10 business days after the final compliance date in table 1 of this subpart.

§ 60.3064 What must I do if I close my air curtain incinerator that burns only wood waste, clean lumber, and yard waste and then restart it?

(a) If you close your incinerator but will reopen it prior to the final compliance date in your State plan, you must meet the final compliance date specified in table 1 of this subpart.

(b) If you close your incinerator but will restart it after your final compliance date, you must meet the emission limitations on the date your incinerator restarts operation.

§ 60.3065 What must I do if I plan to permanently close my air curtain incinerator that burns only wood waste, clean lumber, and yard waste and not restart it?

You must close the unit before the final compliance date specified in table 1 of this subpart.

§ 60.3066 What are the emission limitations for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?

(a) Within 180 days after your final compliance date in table 1 of this subpart, you must meet the two limitations specified in paragraphs (a)(1) and (2) of this section.

(1) The opacity limitation is 10 percent (6-minute average), except as described in paragraph (a)(2) of this section.

(2) The opacity limitation is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) The limitations in paragraph (a) of this section apply at all times except during malfunctions.

§ 60.3067 How must I monitor opacity for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

(b) Conduct an initial test for opacity as specified in § 60.8 within 180 days after the final compliance date in table 1 of this subpart.

(c) After the initial test for opacity, conduct annual tests no more than 12 months following the date of your previous test.

(d) If the air curtain incinerator has been out of operation for more than 12 months following the date of your previous test, then you must conduct a test for opacity upon startup of the unit.

§ 60.3068 What are the recordkeeping and reporting requirements for air curtain incinerators that burn only wood waste, clean lumber, and yard waste?

(a) Keep records of results of all initial and annual opacity tests in either paper copy or computer-readable format that can be printed upon request, unless the Administrator approves another format, for at least 5 years. You must keep each record on site for at least 2 years. You may keep the records off site for the remaining 3 years.

(b) Make all records available for submittal to the Administrator or for an inspector's review.

(c) You must submit the results (each 6-minute average) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.

(d) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.

(e) Keep a copy of the initial and annual reports for a period of 5 years. You must keep each report on site for at least 2 years. You may keep the reports off site for the remaining 3 years.

§ 60.3069 Am I required to apply for and obtain a title V operating permit for my air curtain incinerator that burns only wood waste, clean lumber, and yard waste?

Yes, if your air curtain incinerator is subject to this subpart, you are required to apply for and obtain a title V operating permit as specified in §§ 60.3059 and 60.3060.

MODEL RULE—EQUATIONS

§ 60.3076 What equations must I use?

(a) *Percent oxygen.* Adjust all pollutant concentrations to 7 percent oxygen using Equation 1 of this section.

$$C_{adj} = C_{meas} * (20.9 - 7)/(20.9 - \%O_2) \qquad \text{(Eq. 1)}$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen

C_{meas} = pollutant concentration measured on a dry basis

(20.9–7) = 20.9 percent oxygen–7 percent oxygen (defined oxygen correction basis)

20.9 = oxygen concentration in air, percent

$\%O_2$ = oxygen concentration measured on a dry basis, percent

(b) *Capacity of a very small municipal waste combustion unit.* For very small municipal waste combustion units that can operate continuously for 24-hour periods, calculate the unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For very small municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your very small municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your very small municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For very small municipal waste combustion units with a design not based on heat input capacity, use the maximum design charging rate.

(c) *Capacity of a batch very small municipal waste combustion unit.* Calculate

the capacity of a batch OSWI unit as the maximum design amount of municipal solid waste it can charge per batch multiplied by the maximum number of batches it can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the OSWI unit can combust 24/16, or 1.5 batches, in 24 hours.

(d) *Carbon monoxide pollutant rate.* When hourly average pollutant rates (E_h) are obtained (e.g., CEMS values), compute the rolling average carbon monoxide pollutant rate (E_a) for each 12-hour period using the following equation:

$$E_a = \frac{1}{12}\sum_{j=1}^{12} E_{hj} \qquad \text{(Eq. 2)}$$

Where:

E_a = Average carbon monoxide pollutant rate for the 12-hour period, ppm corrected to 7 percent O_2.

E_{hj} = Hourly arithmetic average pollutant rate for hour ''j,'' ppm corrected to 7 percent O_2.

MODEL RULE—DEFINITIONS

§ 60.3078 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subpart A (General Provisions) of this part.

Administrator means:

(1) For approved and effective State section 111(d)/129 plans, the Director of the State air pollution control agency, or his or her delegatee;

(2) For Federal section 111(d)/129 plans, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by the Administrator of the EPA to perform the specified task; and

(3) For NSPS, the Administrator of the EPA, an employee of the EPA, the Director of the State air pollution control agency, or employee of the State air pollution control agency to whom the authority has been delegated by the Administrator of the EPA to perform the specified task.

Air curtain incinerator means an incineration unit operating by forcefully projecting a curtain of air across an open, integrated combustion chamber (fire box) or open pit or trench (trench burner) in which combustion occurs. For the purpose of this subpart and subpart EEEE only, air curtain incinerators include both firebox and trench burner units.

Auxiliary fuel means natural gas, liquified petroleum gas, fuel oil, or diesel fuel.

Batch OSWI unit means an OSWI unit that is designed such that neither waste charging nor ash removal can occur during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Chemotherapeutic waste means waste material resulting from the production or use of anti-neoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Class II municipal solid waste landfill means a landfill that meets four criteria:

(1) Accepts, for incineration or disposal, less than 20 tons per day of municipal solid waste or other solid wastes based on an annual average;

(2) Is located on a site where there is no evidence of groundwater pollution caused or contributed to by the landfill;

(3) Is not connected by road to a Class I municipal solid waste landfill, as defined by Alaska regulatory code 18 AAC 60.300(c) or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill; and

(4) Serves a community that meets one of two criteria:

(i) Experiences for at least three months each year, an interruption in access to surface transportation, preventing access to a Class I municipal solid waste landfill; or

(ii) Has no practicable waste management alternative, with a landfill located in an area that annually receives 25 inches or less of precipitation.

Class III municipal solid waste landfill is a landfill that is not connected by road to a Class I municipal solid waste landfill, as defined by Alaska regulatory code 18 AAC 60.300(c) or, if connected by road, is located more than 50 miles from a Class I municipal solid waste landfill, and that accepts, for disposal, either of the following two criteria:

(1) Ash from incinerated municipal waste in quantities less than one ton per day on an annual average, which ash must be free of food scraps that might attract animals; or

(2) Less than five tons per day of municipal solid waste, based on an annual average, and is not located in a place that meets either of the following criteria:

(i) Where public access is restricted, including restrictions on the right to move to the place and reside there; or

(ii) That is provided by an employer and that is populated totally by persons who are required to reside there as a condition of employment and who do not consider the place to be their permanent residence.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

Collected from means the transfer of material from the site at which the material is generated to a separate site where the material is burned.

Contained gaseous material means gases that are in a container when that container is combusted.

Continuous emission monitoring system or CEMS means a monitoring system for continuously measuring and recording the emissions of a pollutant from an OSWI unit.

Continuous OSWI unit means an OSWI unit that is designed to allow waste charging and ash removal during combustion.

Deviation means any instance in which a unit that meets the requirements in § 60.2991, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any unit that meets requirements in § 60.2991 and is required to obtain such a permit; or

(3) Fails to meet any emission limitation, operating limit, or operator qualification and accessibility requirement in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is allowed by this subpart.

Dioxins/furans means tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Energy recovery means the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating.

EPA means the Administrator of the EPA or employee of the EPA that is delegated the authority to perform the specified task.

Institutional facility means a land-based facility owned and/or operated by an organization having a governmental, educational, civic, or religious purpose such as a school, hospital, prison, military installation, church, or other similar establishment or facility.

Institutional waste means solid waste (as defined in this subpart) that is combusted at any institutional facility using controlled flame combustion in an enclosed, distinct operating unit: Whose design does not provide for energy recovery (as defined in this subpart); operated without energy recovery (as defined in this subpart); or operated with only waste heat recovery (as defined in this subpart). Institutional waste also means solid waste (as defined in this subpart) combusted on

site in an air curtain incinerator that is a distinct operating unit of any institutional facility.

Institutional waste incineration unit means any combustion unit that combusts institutional waste (as defined in this subpart) and is a distinct operating unit of the institutional facility that generated the waste. Institutional waste incineration units include field-erected, modular, cyclonic burn barrel, and custom built incineration units operating with starved or excess air, and any air curtain incinerator that is a distinct operating unit of the institutional facility that generated the institutional waste (except those air curtain incinerators listed in § 60.2994(b)).

Intermittent OSWI unit means an OSWI unit that is designed to allow waste charging, but not ash removal, during combustion.

Low-level radioactive waste means waste material that contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable Federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

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.

Metropolitan Statistical Area means any areas listed as metropolitan statistical areas in OMB Bulletin No. 05–02 entitled ''Update of Statistical Area Definitions and Guidance on Their Uses'' dated February 22, 2005 (available on the Web at *http://www.whitehouse.gov/omb/bulletins/*).

Modification or modified unit means an incineration unit you have changed on or after June 16, 2006 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs (current dollars). For an OSWI unit, to determine what systems are within the boundary of the unit used to calculate these costs, see the definition of OSWI unit.

(2) Any physical change in the OSWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Municipal solid waste means refuse (and refuse-derived fuel) collected from the general public and from residential, commercial, institutional, and industrial sources consisting of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials and non-combustible materials such as metal, glass and rock, provided that: (1) The term does not include industrial process wastes or medical wastes that are segregated from such other wastes; and (2) an incineration unit shall not be considered to be combusting municipal solid waste for purposes of this subpart if it combusts a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste, as determined by § 60.2993(b).

Municipal waste combustion unit means, for the purpose of this subpart and subpart EEEE, any setting or equipment that combusts municipal solid waste (as defined in this subpart) including, but not limited to, field-erected, modular, cyclonic burn barrel, and custom built incineration units (with or without energy recovery) operating with starved or excess air, boilers, furnaces, pyrolysis/combustion units, and air curtain incinerators (except those air curtain incinerators listed in § 60.2994(b)).

Other solid waste incineration (OSWI) unit means either a very small municipal waste combustion unit or an institutional waste incineration unit, as defined in this subpart. Unit types listed in § 60.2993 as being excluded from the subpart are not OSWI units subject to this subpart. While not all OSWI units will include all of the following components, an OSWI unit includes, but is not limited to, the municipal or institutional solid waste feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom

ash system. The OSWI unit does not include air pollution control equipment or the stack. The OSWI unit boundary starts at the municipal or institutional waste hopper (if applicable) and extends through two areas:

(1) The combustion unit flue gas system, which ends immediately after the last combustion chamber or after the waste heat recovery equipment, if any; and

(2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. The OSWI unit includes all ash handling systems connected to the bottom ash handling system.

Particulate matter means total particulate matter emitted from OSWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Reconstruction means rebuilding an incineration unit and meeting two criteria:

(1) The reconstruction begins on or after June 16, 2006.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the unit (not including land) updated to current costs (current dollars). For an OSWI unit, to determine what systems are within the boundary of the unit used to calculate these costs, see the definition of OSWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Shutdown means the period of time after all waste has been combusted in the primary chamber. For continuous OSWI, shutdown shall commence no less than 2 hours after the last charge to the incinerator. For intermittent OSWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch OSWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

Solid waste means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014).

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the OSWI unit. For batch OSWI, startup means the period of time between activation of the system and ignition of the waste.

Very small municipal waste combustion unit means any municipal waste combustion unit that has the capacity to combust less than 35 tons per day of municipal solid waste or refuse-derived fuel, as determined by the calculations in § 60.3076.

Waste heat recovery means the process of recovering heat from the combustion flue gases outside of the combustion firebox by convective heat transfer only.

Wet scrubber means an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees,

tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include:

(1) Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

(2) Construction, renovation, or demolition wastes.

(3) Clean lumber.

(4) Treated wood and treated wood products, including wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (*e.g.*, plywood, particle board, flake board, and oriented strand board).

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. Yard waste comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes.

(2) Clean lumber.

TABLE 1 TO SUBPART FFFF OF PART 60—MODEL RULE—COMPLIANCE SCHEDULE

As stated in § 60.3000, you must comply with the following:

Complete this action	By this date [a]
Final compliance [b]	(Dates to be specified in State plan) [c].

[a] Site-specific schedules can be used at the discretion of the State.

[b] Final compliance means that you complete all process changes and retrofit of control devices so that, when the incineration unit is brought on line, all process changes and air pollution control devices necessary to meet the emission limitations operate as designed.

[c] The date can be no later than 3 years after the effective date of State plan approval or December 16, 2010, whichever is earlier.

TABLE 2 TO SUBPART FFFF OF PART 60—MODEL RULE—EMISSION LIMITATIONS

As stated in § 60.3022, you must comply with the following:

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
1. Cadmium	18 micrograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 29 of appendix A of this part.
2. Carbon monoxide	40 parts per million by dry volume.	3-run average (1 hour minimum sample time per run during performance test), and 12-hour rolling averages measured using CEMS [b].	Method 10, 10A, or 10B of appendix A of this part and CEMS.
3. Dioxins/furans (total basis).	33 nanograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 23 of appendix A of this part.
4. Hydrogen chloride	15 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Method 26A of appendix A of this part.
5. Lead	226 micrograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 29 of appendix A of this part.
6. Mercury	74 micrograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Method 29 of appendix A of this part.
7. Opacity	10 percent	6-minute average (observe over three 1-hour test runs; i.e., thirty 6-minute averages).	Method 9 of appendix A of this part.
8. Oxides of nitrogen	103 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Method 7, 7A, 7C, 7D, or 7E of appendix A of this part, or ANSI/ASME PTC 19.10–1981 (IBR, see § 60.17(h)) in lieu of Methods 7 and 7C only.
9. Particulate matter	0.013 grains per dry standard cubic foot.	3-run average (1 hour minimum sample time per run).	Method 5 or 29 of appendix A of this part.

For the air pollutant	You must meet this emission limitation[a]	Using this averaging time	And determining compliance using this method
10. Sulfur dioxide	3.1 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Method 6 or 6C of appendix A of this part, or ANSI/ASME PTC 19.10–1981 (IBR, see § 60.17(h)) in lieu of Method 6 only.

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.
[b] Calculated each hour as the average of the previous 12 operating hours.

TABLE 3 TO SUBPART FFFF OF PART 60—MODEL RULE—OPERATING LIMITS FOR INCINERATORS AND WET SCRUBBERS

As stated in § 60.3023, you must comply with the following:

For these operating parameters	You must establish operating limits	And monitoring using these minimum frequencies		
		Data measurement	Data recording	Averaging time
1. Charge rate	Maximum charge rate ..	Continuous	Every hour	Daily for batch units. 3-hour rolling for continuous and intermittent units.[a]
2. Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage.	Continuous	Every 15 minutes	3-hour rolling.[a]
3. Scrubber liquor flow rate.	Minimum flow rate	Continuous	Every 15 minutes	3-hour rolling.[a]
4. Scrubber liquor pH ..	Minimum pH	Continuous	Every 15 minutes	3-hour rolling.[a]

[a] Calculated each hour as the average of the previous 3 operating hours.

TABLE 4 TO SUBPART FFFF OF PART 60—MODEL RULE—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

As stated in § 60.3039, you must comply with the following:

For the following pollutants	Use the following span values for your CEMS	Use the following performance specifications (P.S.) in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
1. Carbon Monoxide	125 percent of the maximum hourly potential carbon monoxide emissions of the waste combustion unit.	P.S.4A	Method 10.
2. Oxygen	25 percent oxygen	P.S.3	Method 3A or 3B, or ANSI/ASME PTC 19.10–1981 (IBR, see § 60.17(h)) in lieu of Method 3B only.

TABLE 5 TO SUBPART FFFF OF PART 60—MODEL RULE—SUMMARY OF REPORTING REQUIREMENTS

As stated in § 60.3048, you must comply with the following:

Report	Due date	Contents	Reference
1. Initial test report	a. No later than 60 days following the initial performance test	i. Complete test report for the initial performance test; and.	§ 60.3049.
		ii. The values for the site-specific operating limits.	§ 60.3049.
2. Waste management plan	a. No later than 60 days following the initial performance test	i. Reduction or separation of recyclable materials; and.	§§ 60.3010 through 60.3012.
		ii. Identification of additional waste management measures and how they will be implemented.	§§ 60.3010 through 60.3012.

Report	Due date	Contents	Reference
3. Annual Report	a. No later than 12 months following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 months following the previous report	i. Company Name and address;.	§§ 60.3050 and 60.3051.
		ii. Statement and signature by the owner or operator;.	§§ 60.3050 and 60.3051.
		iii. Date of report;	§§ 60.3050 and 60.3051.
		iv. Values for the operation limits;.	§§ 60.3050 and 60.3051.
		v. If no deviations or malfunctions were reported, a statement that no deviations occurred during the reporting period;.	§§ 60.3050 and 60.3051.
		vi. Highest and lowest recorded 12-hour averages, as applicable, for carbon monoxide emissions and highest and lowest recorded 3-hour averages, as applicable, for each operating parameter recorded for the calendar year being reported;.	§§ 60.3050 and 60.3051.
		vii. Information for deviations or malfunctions recorded under § 60.2949(b)(6) and (c) through (e);.	§§ 60.3050 and 60.3051.
		viii. If a performance test was conducted during the reporting period, the results of the test;.	§§ 60.3050 and 60.3051.
		ix. If a performance test was not conducted during the reporting period, a statement that the requirements of § 60.2934(a) or (b) were met; and.	§§ 60.3050 and 60.3051.
		x. Documentation of periods when all qualified OSWI unit operators were unavailable for more than 12 hours but less than 2 weeks.	§§ 60.3050 and 60.3051.
4. Emission limitation or operating limit deviation report.	a. By August 1 of that year for data collected during the first half of the calendar year. By February 1 of the following year for data collected during the second half of the calendar year	i. Dates and times of deviation;.	§§ 60.3052 and 60.3053.
		ii. Averaged and recorded data for those dates;.	§§ 60.3052 and 60.3053.
		iii. Duration and causes of each deviation and the corrective actions taken..	§§ 60.3052 and 60.3053.
		iv. Copy of operating limit monitoring data and any test reports;.	§§ 60.3052 and 60.3053.
		v. Dates, times, and causes for monitor downtime incidents;.	§§ 60.3052 and 60.3053.
		vi. Whether each deviation occurred during a period of startup, shutdown, or malfunction; and.	§§ 60.3052 and 60.3053.
		vii. Dates, times, and duration of any bypass of the control device.	§§ 60.3052 and 60.3053.
5. Qualified operator deviation notification.	a. Within 10 days of deviation	i. Statement of cause of deviation;.	§ 60.3054(a)(1).

Report	Due date	Contents	Reference
		ii. Description of efforts to have an accessible qualified operator; and.	§ 60.3054(a)(1).
		iii. The date a qualified operator will be accessible.	§ 60.3054(a)(1).
6. Qualified operation deviation status report.	a. Every 4 weeks following deviation	i. Description of efforts to have an accessible qualified operator;.	§ 60.3054(a)(2).
		ii. The date a qualified operator will be accessible; and.	§ 60.3054(a)(2).
		iii. Request to continue operation.	§ 60.3054(a)(2).
7. Qualified operator deviation notification of resumed operation.	a. Prior to resuming operation	i. Notification that you are resuming operation.	§ 60.3054(b).

Note: This table is only a summary, see the referenced sections of the rule for the complete requirements.

[70 FR 74907, Dec. 16, 2005, as amended at 71 FR 67806, Nov. 24, 2006]

Subparts GGGG–HHHH [Reserved]

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

SOURCE: 71 FR 39172, July 11, 2006, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

EMISSION STANDARDS FOR MANUFACTURERS

§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 89.112, 40 CFR 89.113, 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.

(d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(3) Their 2013 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(e) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards and other requirements for new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.110, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 1 to 40 CFR 1042.1 identifies 40 CFR part 1042 as being applicable, 40 CFR part 1042, if

the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the Federal Aid Highway System (FAHS); and

(2) Marine offshore installations.

(g) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power, and displacement of the reconstructed stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants for model year 2007 engines, and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(2) For 2011 model year and later, the certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(c) [Reserved]

(d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.

(e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder;

(3) Their 2013 model year emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder; and

(4) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power greater than or

equal to 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(f) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE to the certification emission standards and other requirements applicable to Tier 3 new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power less than 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI internal combustion engines identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 2 to 40 CFR 1042.101 identifies Tier 3 standards as being applicable, the requirements applicable to Tier 3 engines in 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the FAHS; and

(2) Marine offshore installations.

(h) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (f) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed emergency stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

§ 60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§ 60.4201 and 60.4202 during the certified emissions life of the engines.

[76 FR 37968, June 28, 2011]

EMISSION STANDARDS FOR OWNERS AND OPERATORS

§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in § 60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

(c) Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm);

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012 and before January 1, 2016, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) For engines installed on or after January 1, 2016, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $9.0 \cdot n^{-0.20}$ g/KW-hr ($6.7 \cdot n^{-0.20}$ g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm; and

(iii) 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm.

(4) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

(d) Owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the not-to-exceed (NTE) standards as indicated in § 60.4212.

(e) Owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified in paragraphs (a) through (d) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in § 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

(d) Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/kW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

(e) Owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in § 60.4212.

(f) Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§ 60.4204 and 60.4205 over the entire life of the engine.

[76 FR 37969, June 28, 2011]

FUEL REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

(c) [Reserved]

(d) Beginning June 1, 2012, owners and operators of stationary CI ICE subject to this subpart with a displacement of greater than or equal to 30 liters per cylinder are no longer subject to the requirements of paragraph (a) of this section, and must use fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).

(e) Stationary CI ICE that have a national security exemption under § 60.4200(d) are also exempt from the fuel requirements in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than

56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

(h) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.

(i) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

COMPLIANCE REQUIREMENTS

§60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §60.4201(a) through (c) and §60.4202(a), (b) and (d) using the certification procedures required in 40 CFR part 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later

standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in § 60.4201(d) and (e) and § 60.4202(e) and (f) using the certification procedures required in 40 CFR part 94, subpart C, or 40 CFR part 1042, subpart C, as applicable, and must test their engines as specified in 40 CFR part 94 or 1042, as applicable.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135, and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 89, 40 CFR part 94 or 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

(1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.

(2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:

(i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.

(ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.

(iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate, but the words ''stationary'' must be included instead of ''nonroad'' or ''marine'' on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR parts 89, 94, 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts.

(e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words ''and stationary'' after the word ''nonroad'' or ''marine,'' as appropriate, to the label.

(f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in §60.4202 but does not meet all the emission standards for non-emergency engines in §60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.

(g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as ''Fire Pump Applications Only''.

(h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of §§60.4201 or 60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.

(i) The replacement engine provisions of 40 CFR 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or

if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in § 60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(b) or § 60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must comply by purchasing an engine certified to the emission standards in § 60.4204(b), or § 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(d) If you are an owner or operator and must comply with the emission standards specified in § 60.4204(c) or § 60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in § 60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and NO_X and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NO_X and PM emissions;

(iii) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in § 60.4213.

(e) If you are an owner or operator of a modified or reconstructed stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(e) or

§60.4205(f), you must demonstrate compliance according to one of the methods specified in paragraphs (e)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in §60.4204(e) or §60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in §60.4212 or §60.4213, as appropriate. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP–002–3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP–002–3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads

that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than

30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

(e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

§60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted according to the requirements in §60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must last at least 1 hour.

(d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.

(1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \qquad \text{(Eq. 2)}$$

Where:

C_i = concentration of NO_X or PM at the control device inlet,

C_o = concentration of NO_X or PM at the control device outlet, and

R = percent reduction of NO_X or PM emissions.

(2) You must normalize the NO_X or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O_2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO_2) using the procedures described in paragraph (d)(3) of this section.

$$C_{adj} = C_d \frac{5.9}{20.9 - \%\,O_2} \qquad \text{(Eq. 3)}$$

Where:

C_{adj} = Calculated NO_X or PM concentration adjusted to 15 percent O_2.

C_d = Measured concentration of NO_X or PM, uncorrected.

5.9 = 20.9 percent O_2 − 15 percent O_2, the defined O_2 correction value, percent.

$\%O_2$ = Measured O_2 concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O_2 and CO_2 concentration is measured in lieu of O_2 concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209_{F_d}}{F_c} \qquad \text{(Eq. 4)}$$

Where:

F_o = Fuel factor based on the ratio of O_2 volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O_2, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3/J ($dscf/10^6$ Btu).

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2, as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \qquad \text{(Eq. 5)}$$

Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 − 15 percent O_2, the defined O_2 correction value, percent.

(iii) Calculate the NO_X and PM gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \qquad \text{(Eq. 6)}$$

Where:

C_{adj} = Calculated NO_X or PM concentration adjusted to 15 percent O_2.

C_d = Measured concentration of NO_X or PM, uncorrected.

$\%CO_2$ = Measured CO_2 concentration, dry basis, percent.

(e) To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{\text{KW-hour}} \qquad \text{(Eq. 7)}$$

Where:

ER = Emission rate in grams per KW-hour.

C_d = Measured NO_X concentration in ppm.

$1.912x10^{-3}$ = Conversion constant for ppm NO_X to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

(f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{\text{KW-hour}} \qquad \text{(Eq. 8)}$$

Where:

ER = Emission rate in grams per KW-hour.

C_{adj} = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

§60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in §60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in §60.4211(f)(3)(i), you must submit an annual report according to

the requirements in paragraphs (d)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 60.4211(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purposes specified in § 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 60.4.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013]

SPECIAL REQUIREMENTS

§ 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

(a) Stationary CI ICE with a displacement of less than 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §§ 60.4202 and 60.4205.

(b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in § 60.4207.

(c) Stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the following emission standards:

(1) For engines installed prior to January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NO_X in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

§ 60.4216 What requirements must I meet for engines used in Alaska?

(a) Prior to December 1, 2010, owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder located in areas of Alaska not accessible by the FAHS should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.

(b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in areas of Alaska not accessible by the FAHS may meet the requirements of this subpart by manufacturing and installing engines meeting the requirements of 40 CFR parts 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR parts 89 and 1039, as indicated in sections §§ 60.4201(f) and 60.4202(g) of this subpart.

(c) Manufacturers, owners and operators of stationary CI ICE that are located in areas of Alaska not accessible by the FAHS may choose to meet the applicable emission standards for emergency engines in § 60.4202 and § 60.4205, and not those for non-emergency engines in § 60.4201 and § 60.4204, except that for 2014 model year and later non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in § 60.4201 and § 60.4204 or install a PM emission control device that achieves PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.

(d) The provisions of § 60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS.

(e) The provisions of § 60.4208(a) do not apply to owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS until after December 31, 2009.

(f) The provisions of this section and § 60.4207 do not prevent owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 parts per million. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.

[76 FR 37971, June 28, 2011]

§ 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in § 60.4204 or § 60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.

[76 FR 37972, June 28, 2011]

GENERAL PROVISIONS

§ 60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

DEFINITIONS

§ 60.4219 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and subcomponents comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

(1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.

(2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.

(3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4211(f)(2)(ii) or (iii) and § 60.4211(f)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of ''manufacturer'' in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is

used to provide power to pump water for fire suppression or protection.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means the calendar year in which an engine is manufactured (see ''date of manufacture''), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see ''date of manufacture''), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other nonstationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see ''date of manufacture'').

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011; 78 FR 6696, Jan. 30, 2013]

TABLE 1 TO SUBPART IIII OF PART 60—EMISSION STANDARDS FOR STATIONARY PRE-2007 MODEL YEAR ENGINES WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER AND 2007–2010 MODEL YEAR ENGINES >2,237 KW (3,000 HP) AND WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER

[As stated in §§ 60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007–2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO_X	HC	NO_X	CO	PM
KW<8 (HP<11)	10.5 (7.8)	.....	.....	8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)	.....	.....	6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)	.....	.....	5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)	.....	.....	9.2 (6.9)	.....	.....
56≤KW<75 (75≤HP<100)	.....	.....	9.2 (6.9)	.....	.....
75≤KW<130 (100≤HP<175)	.....	.....	9.2 (6.9)	.....	.....
130≤KW<225 (175≤HP<300)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

TABLE 2 TO SUBPART IIII OF PART 60—EMISSION STANDARDS FOR 2008 MODEL YEAR AND LATER EMERGENCY STATIONARY CI ICE <37 KW (50 HP) WITH A DISPLACEMENT OF <10 LITERS PER CYLINDER

[As stated in § 60.4202(a)(1), you must comply with the following emission standards]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO_X + NMHC	CO	PM
KW<8 (HP<11)	2008+	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008+	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008+	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

TABLE 3 TO SUBPART IIII OF PART 60—CERTIFICATION REQUIREMENTS FOR STATIONARY FIRE PUMP ENGINES

As stated in § 60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to § 60.4202(d)[1]
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

[1]Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011]

TABLE 4 TO SUBPART IIII OF PART 60—EMISSION STANDARDS FOR STATIONARY FIRE PUMP ENGINES

[As stated in §§ 60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	NMHC + NO_X	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ [1]	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ [1]	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+ [2]	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ [3]	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ [3]	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

[1] For model years 2011–2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

[2] For model years 2010–2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

[3] In model years 2009–2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

TABLE 5 TO SUBPART IIII OF PART 60—LABELING AND RECORDKEEPING REQUIREMENTS FOR NEW STATIONARY EMERGENCY ENGINES

[You must comply with the labeling requirements in § 60.4210(f) and the recordkeeping requirements in § 60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

TABLE 6 TO SUBPART IIII OF PART 60—OPTIONAL 3-MODE TEST CYCLE FOR STATIONARY FIRE PUMP ENGINES

[As stated in § 60.4210(g), manufacturers of fire pump engines may use the following test cycle for testing fire pump engines:]

Mode No.	Engine speed [1]	Torque (percent) [2]	Weighting factors
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

[1] Engine speed: ±2 percent of point.

[2] Torque: NFPA certified nameplate HP for 100 percent point. All points should be ±2 percent of engine percent load value.

TABLE 7 TO SUBPART IIII OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS FOR STATIONARY CI ICE WITH A DISPLACEMENT OF ≥30 LITERS PER CYLINDER

[As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:]

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥30 liters per cylinder.	a. Reduce NO_X emissions by 90 percent or more.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A.	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and,	(3) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO_X concentration.
		iv. Measure NO_X at the inlet and outlet of the control device.	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(d) NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	b. Limit the concentration of NO_X in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A.	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location; and,	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurement for NO_X concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and,	(3) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO_X concentration.
		iv. Measure NO_X at the exhaust of the stationary internal combustion engine.	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03 (incorporated by reference, see § 60.17).	(d) NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	c. Reduce PM emissions by 60 percent or more.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A.	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.

[As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:]

For each	Complying with the requirement to	You must	Using	According to the following requirements
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A.	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the inlet and outlet of the control device.	(4) Method 5 of 40 CFR part 60, appendix A.	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A.	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A.	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A.	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine.	(4) Method 5 of 40 CFR part 60, appendix A.	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII

[As stated in § 60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions.	Yes.	
§ 60.2	Definitions	Yes	Additional terms defined in § 60.4219.
§ 60.3	Units and abbreviations	Yes.	
§ 60.4	Address	Yes.	
§ 60.5	Determination of construction or modification.	Yes.	
§ 60.6	Review of plans	Yes.	
§ 60.7	Notification and Recordkeeping	Yes	Except that § 60.7 only applies as specified in § 60.4214(a).
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§ 60.9	Availability of information	Yes.	
§ 60.10	State Authority	Yes.	
§ 60.11	Compliance with standards and maintenance requirements.	No	Requirements are specified in subpart IIII.
§ 60.12	Circumvention	Yes.	

[As stated in § 60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.13	Monitoring requirements	Yes	Except that § 60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§ 60.14	Modification	Yes.	
§ 60.15	Reconstruction	Yes.	
§ 60.16	Priority list	Yes.	
§ 60.17	Incorporations by reference	Yes.	
§ 60.18	General control device requirements	No.	
§ 60.19	General notification and reporting requirements.	Yes.	

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

SOURCE: 73 FR 3591, Jan. 18, 2008, unless otherwise noted.

WHAT THIS SUBPART COVERS

§ 60.4230 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008.

(2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:

(i) On or after July 1, 2008; or

(ii) On or after January 1, 2009, for emergency engines.

(3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) On or after January 1, 2009, for emergency engines.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

(5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.

(6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

(b) The provisions of this subpart are not applicable to stationary SI ICE being tested at an engine test cell/stand.

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(d) For the purposes of this subpart, stationary SI ICE using alcohol-based fuels are considered gasoline engines.

(e) Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 90 and 1048, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(f) Owners and operators of facilities with internal combustion engines that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37972, June 28, 2011]

EMISSION STANDARDS FOR MANUFACTURERS

§ 60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as follows:

If engine displacement is * * *	and manufacturing dates are * * *	the engine must meet emission standards and related requirements for nonhandheld engines under * * *
(1) below 225 cc	July 1, 2008 to December 31, 2011	40 CFR part 90.
(2) below 225 cc	January 1, 2012 or later	40 CFR part 1054.
(3) at or above 225 cc	July 1, 2008 to December 31, 2010	40 CFR part 90.
(4) at or above 225 cc	January 1, 2011 or later	40 CFR part 1054.

(b) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE with a maximum engine power greater than 25 HP and less than 130 HP that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a

total displacement less than or equal to 1,000 cubic centimeters (cc) that use gasoline to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate.

(c) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc that are rich burn engines that use LPG to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate.

(d) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) under the voluntary manufacturer certification program described in this subpart must certify those engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers who choose to certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP (except gasoline and rich burn engines that use LPG), must certify those engines to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc (except gasoline and rich burn engines that use LPG) to the certification emission standards for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate. For stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) manufactured prior to January 1, 2011, manufacturers may choose to certify these engines to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP.

(e) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) under the voluntary manufacturer certification program described in this subpart must certify those engines to the emission standards in Table 1 to this subpart. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) that are lean burn engines that use LPG to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. For stationary SI ICE with a maximum engine power greater than or equal to 100 HP (75 KW) and less than 500 HP (373 KW) manufactured prior to January 1, 2011, and for stationary SI ICE with a maximum engine power greater than or equal to 500

HP (373 KW) manufactured prior to July 1, 2010, manufacturers may choose to certify these engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048 applicable to engines that are not severe duty engines.

(f) Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, to the extent they apply to equipment manufacturers.

(g) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary SI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed stationary SI ICE.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59175, Oct. 8, 2008; 76 FR 37973, June 28, 2011; 78 FR 6697, Jan. 30, 2013]

§ 60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?

Engines manufactured by stationary SI internal combustion engine manufacturers must meet the emission standards as required in § 60.4231 during the certified emissions life of the engines.

EMISSION STANDARDS FOR OWNERS AND OPERATORS

§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

(a) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in § 60.4231(a) for their stationary SI ICE.

(b) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that use gasoline must comply with the emission standards in § 60.4231(b) for their stationary SI ICE.

(c) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in § 60.4231(c) for their stationary SI ICE.

(d) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE and with the emission standards in Table 1 to this subpart for their emergency stationary SI ICE. Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) manufactured prior to January 1, 2011, that were certified to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP, may optionally choose to meet those standards.

(e) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.

(f) Owners and operators of any modified or reconstructed stationary SI ICE

subject to this subpart must meet the requirements as specified in paragraphs (f)(1) through (5) of this section.

(1) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with emission standards in § 60.4231(a) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in § 60.4231(a) applicable to engines manufactured on July 1, 2008.

(2) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline engines and are modified or reconstructed after June 12, 2006, must comply with the emission standards in § 60.4231(b) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(b) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

(3) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG, that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in § 60.4231(c). Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(c) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

(4) Owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (d) or (e) of this section, except that such owners and operators of non-emergency engines and emergency engines greater than or equal to 130 HP must meet a nitrogen oxides (NO_X) emission standard of 3.0 grams per HP-hour (g/HP-hr), a CO emission standard of 4.0 g/HP-hr (5.0 g/HP-hr for non-emergency engines less than 100 HP), and a volatile organic compounds (VOC) emission standard of 1.0 g/HP-hr, or a NO_X emission standard of 250 ppmvd at 15 percent oxygen (O_2), a CO emission standard 540 ppmvd at 15 percent O_2 (675 ppmvd at 15 percent O_2 for non-emergency engines less than 100 HP), and a VOC emission standard of 86 ppmvd at 15 percent O_2, where the date of manufacture of the engine is:

(i) Prior to July 1, 2007, for non-emergency engines with a maximum engine power greater than or equal to 500 HP (except lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) Prior to July 1, 2008, for non-emergency engines with a maximum engine power less than 500 HP;

(iii) Prior to January 1, 2009, for emergency engines;

(iv) Prior to January 1, 2008, for non-emergency lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP.

(5) Owners and operators of stationary SI landfill/digester gas ICE engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (e) of this section for stationary landfill/digester gas engines. Engines with maximum engine power less than 500 HP and a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power less than 500 HP manufactured on July 1, 2008. Engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) and a date of manufacture prior to July 1, 2007 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) manufactured on July 1, 2007. Lean burn engines greater than or equal to

500 HP and less than 1,350 HP with a date of manufacture prior to January 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE that are lean burn engines greater than or equal to 500 HP and less than 1,350 HP and manufactured on January 1, 2008.

(g) Owners and operators of stationary SI wellhead gas ICE engines may petition the Administrator for approval on a case-by-case basis to meet emission standards no less stringent than the emission standards that apply to stationary emergency SI engines greater than 25 HP and less than 130 HP due to the presence of high sulfur levels in the fuel, as specified in Table 1 to this subpart. The request must, at a minimum, demonstrate that the fuel has high sulfur levels that prevent the use of aftertreatment controls and also that the owner has reasonably made all attempts possible to obtain an engine that will meet the standards without the use of aftertreatment controls. The petition must request the most stringent standards reasonably applicable to the engine using the fuel.

(h) Owners and operators of stationary SI ICE that are required to meet standards that reference 40 CFR 1048.101 must, if testing their engines in use, meet the standards in that section applicable to field testing, except as indicated in paragraph (e) of this section.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37973, June 28, 2011]

§ 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in § 60.4233 over the entire life of the engine.

OTHER REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?

Owners and operators of stationary SI ICE subject to this subpart that use gasoline must use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195.

§ 60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

(a) After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in § 60.4233.

(b) After July 1, 2009, owners and operators may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in § 60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in § 60.4233 may not be installed after January 1, 2010.

(c) For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), owners and operators may not install engines that do not meet the applicable requirements in § 60.4233 after January 1, 2011.

(d) In addition to the requirements specified in §§ 60.4231 and 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs (a), (b), and (c) of this section, after the date specified in paragraph (a), (b), and (c) of this section.

(e) The requirements of this section do not apply to owners and operators of stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.

§ 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

(a) Starting on July 1, 2010, if the emergency stationary SI internal combustion engine that is greater than or equal to 500 HP that was built on or after July 1, 2010, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.

(b) Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.

(c) If you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine.

COMPLIANCE REQUIREMENTS FOR MANUFACTURERS

§ 60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(a) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§ 60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(b) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§ 60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(c) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine

manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§ 60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?

(a) Manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable, under the voluntary certification program described in this subpart. Manufacturers who certify their engines under the voluntary certification program must meet the requirements as specified in paragraphs (b) through (g) of this section. In addition, manufacturers of stationary SI internal combustion engines who choose to certify their engines under the voluntary certification program, must also meet the requirements as specified in § 60.4247.

(b) Manufacturers of engines other than those certified to standards in 40 CFR part 90 or 40 CFR part 1054 must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must follow the same test procedures that apply to large SI nonroad engines under 40 CFR part 1048, but must use the D–1 cycle of International Organization of Standardization 8178–4: 1996(E) (incorporated by reference, see 40 CFR 60.17) or the test cycle requirements specified in Table 3 to 40 CFR 1048.505, except that Table 3 of 40 CFR 1048.505 applies to high load engines only. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

(c) Certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, is voluntary, but manufacturers who decide to certify are subject to all of the requirements indicated in this subpart with regard to the engines included in their certification. Manufacturers must clearly label their stationary SI engines as certified or non-certified engines.

(d) Manufacturers of natural gas fired stationary SI ICE who conduct voluntary certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the definition of pipeline-quality natural gas. The fuel used for certifying stationary SI natural gas engines must meet the definition of pipeline-quality natural gas as

described in § 60.4248. In addition, the manufacturer must provide information to the owner and operator of the certified stationary SI engine including the specifications of the pipeline-quality natural gas to which the engine is certified and what adjustments the owner or operator must make to the engine when installed in the field to ensure compliance with the emission standards.

(e) Manufacturers of stationary SI ICE that are lean burn engines fueled by LPG who conduct voluntary certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the specifications in 40 CFR 1065.720.

(f) Manufacturers may certify their engines for operation using gaseous fuels in addition to pipeline-quality natural gas; however, the manufacturer must specify the properties of that fuel and provide testing information showing that the engine will meet the emission standards specified in § 60.4231(d) or (e), as applicable, when operating on that fuel. The manufacturer must also provide instructions for configuring the stationary engine to meet the emission standards on fuels that do not meet the pipeline-quality natural gas definition. The manufacturer must also provide information to the owner and operator of the certified stationary SI engine regarding the configuration that is most conducive to reduced emissions where the engine will be operated on gaseous fuels with different quality than the fuel that it was certified to.

(g) A stationary SI engine manufacturer may certify an engine family solely to the standards applicable to landfill/digester gas engines as specified in § 60.4231(d) or (e), as applicable, but must certify their engines for operation using landfill/digester gas and must add a permanent label stating that the engine is for use only in landfill/digester gas applications. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(h) For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

(i) For engines being certified to the voluntary certification standards in Table 1 of this subpart, the VOC measurement shall be made by following the procedures in 40 CFR 1065.260 and 1065.265 in order to determine the total NMHC emissions by using a flame-ionization detector and non-methane cutter. As an alternative to the non-methane cutter, manufacturers may use a gas chromatograph as allowed under 40 CFR 1065.267 and may measure ethane, as well as methane, for excluding such levels from the total VOC measurement.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59176, Oct. 8, 2008; 76 FR 37974, June 28, 2011]

§ 60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must meet the provisions of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as applicable, as well as 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1048 or 1054, except that engines certified pursuant to the voluntary certification procedures in § 60.4241 are subject only to the provisions indicated in § 60.4247 and are permitted to provide instructions to owners and operators allowing for deviations from certified configurations, if such deviations are consistent with the provisions of paragraphs § 60.4241(c) through (f). Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, as applicable. Labels on engines certified to 40 CFR part 1048 must refer to stationary engines, rather than or in addition to nonroad engines, as appropriate.

(b) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR part 90, 40 CFR part 1048, or 40

CFR part 1054 for that model year may certify any such family that contains both nonroad and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts. This provision also applies to equipment or component manufacturers certifying to standards under 40 CFR part 1060.

(c) Manufacturers of engine families certified to 40 CFR part 1048 may meet the labeling requirements referred to in paragraph (a) of this section for stationary SI ICE by either adding a separate label containing the information required in paragraph (a) of this section or by adding the words ''and stationary'' after the word ''nonroad'' to the label.

(d) For all engines manufactured on or after January 1, 2011, and for all engines with a maximum engine power greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, a stationary SI engine manufacturer that certifies an engine family solely to the standards applicable to emergency engines must add a permanent label stating that the engines in that family are for emergency use only. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(e) All stationary SI engines subject to mandatory certification that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230. Stationary SI engines subject to standards in 40 CFR part 90 may use the provisions in 40 CFR 90.909. Manufacturers of stationary engines with a maximum engine power greater than 25 HP that are not certified to standards and other requirements under 40 CFR part 1048 are subject to the labeling provisions of 40 CFR 1048.20 pertaining to excluded stationary engines.

(f) For manufacturers of gaseous-fueled stationary engines required to meet the warranty provisions in 40 CFR 90.1103 or 1054.120, we may establish an hour-based warranty period equal to at least the certified emissions life of the engines (in engine operating hours) if we determine that these engines are likely to operate for a number of hours greater than the applicable useful life within 24 months. We will not approve an alternate warranty under this paragraph (f) for nonroad engines. An alternate warranty period approved under this paragraph (f) will be the specified number of engine operating hours or two years, whichever comes first. The engine manufacturer shall request this alternate warranty period in its application for certification or in an earlier submission. We may approve an alternate warranty period for an engine family subject to the following conditions:

(1) The engines must be equipped with non-resettable hour meters.

(2) The engines must be designed to operate for a number of hours substantially greater than the applicable certified emissions life.

(3) The emission-related warranty for the engines may not be shorter than any published warranty offered by the manufacturer without charge for the engines. Similarly, the emission-related warranty for any component shall not be shorter than any published warranty offered by the manufacturer without charge for that component.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008]

COMPLIANCE REQUIREMENTS FOR OWNERS AND OPERATORS

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

(a) If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in § 60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in § 60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.

(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.

(2) If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, your engine will be considered a non-certified engine, and you must demonstrate compliance according to (a)(2)(i) through (iii) of this section, as appropriate.

(i) If you are an owner or operator of a stationary SI internal combustion engine less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup to demonstrate compliance.

(iii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

(b) If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in § 60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.

(1) Purchasing an engine certified according to procedures specified in this subpart, for the same model year and demonstrating compliance according to one of the methods specified in paragraph (a) of this section.

(2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in § 60.4233(d) or (e) and according to the requirements specified in § 60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.

(i) If you are an owner or operator of a stationary SI internal combustion engine greater than 25 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

(c) If you are an owner or operator of a stationary SI internal combustion

engine that must comply with the emission standards specified in § 60.4233(f), you must demonstrate compliance according paragraph (b)(2)(i) or (ii) of this section, except that if you comply according to paragraph (b)(2)(i) of this section, you demonstrate that your non-certified engine complies with the emission standards specified in § 60.4233(f).

(d) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (d)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (d)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (d)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (d)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (d)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (d)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP–002–3, Capacity and Energy Emergencies (incorporated by reference, see § 60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP–002–3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (d)(2) of this section. Except as provided in paragraph (d)(3)(i) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(e) Owners and operators of stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of § 60.4233.

(f) If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing as indicated in this section, but you are not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

(h) If you are an owner/operator of an stationary SI internal combustion engine with maximum engine power greater than or equal to 500 HP that is manufactured after July 1, 2007 and before July 1, 2008, and must comply with the emission standards specified in sections 60.4233(b) or (c), you must comply by one of the methods specified in paragraphs (h)(1) through (h)(4) of this section.

(1) Purchasing an engine certified according to 40 CFR part 1048. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(i) If you are an owner or operator of a modified or reconstructed stationary SI internal combustion engine and must comply with the emission standards specified in § 60.4233(f), you must demonstrate compliance according to one of the methods specified in paragraphs (i)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in § 60.4233(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in § 60.4244. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37974, June 28, 2011; 78 FR 6697, Jan. 30, 2013]

TESTING REQUIREMENTS FOR OWNERS AND OPERATORS

§60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

(c) You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

(d) To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 1)}$$

Where:

ER = Emission rate of NO_X in g/HP-hr.

C_d = Measured NO_X concentration in parts per million by volume (ppmv).

1.912×10^{-3} = Conversion constant for ppm NO_X to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

(e) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 2)}$$

Where:

ER = Emission rate of CO in g/HP-hr.

C_d = Measured CO concentration in ppmv.

1.164×10^{-3} = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 3)}$$

Where:

ER = Emission rate of VOC in g/HP-hr.

C_d = VOC concentration measured as propane in ppmv.

1.833×10^{-3} = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{C_{Ai}} \qquad \text{(Eq. 4)}$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.

C_{Mi} = Measured concentration of compound i in ppmv as carbon.

C_{Ai} = True concentration of compound i in ppmv as carbon.

$$C_{icorr} = RF_i \times C_{imeas} \qquad \text{(Eq. 5)}$$

Where:

C_{icorr} = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

C_{imeas} = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Peq} = 0.6098 \times C_{icorr} \qquad \text{(Eq. 6)}$$

Where:

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

NOTIFICATION, REPORTS, AND RECORDS FOR OWNERS AND OPERATORS

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to § 60.4243(a)(2), documentation that the engine meets the emission standards.

(b) For all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The

owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in § 60.4231 must submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

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

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

(d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in § 60.4244 within 60 days after the test has been completed.

(e) If you own or operate an emergency stationary SI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 60.4243(d)(2)(ii) and (iii) or that operates for the purposes specified in § 60.4243(d)(3)(i), you must submit an annual report according to the requirements in paragraphs (e)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 60.4243(d)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 60.4243(d)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 60.4243(d)(2)(ii) and (iii).

(vii) Hours spent for operation for the purposes specified in § 60.4243(d)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in § 60.4243(d)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 60.4.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 78 FR 6697, Jan. 30, 2013]

GENERAL PROVISIONS

§ 60.4246 What parts of the General Provisions apply to me?

Table 3 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

MOBILE SOURCE PROVISIONS

§ 60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Manufacturers certifying to emission standards in 40 CFR part 90, including manufacturers certifying emergency engines below 130 HP, must meet

the provisions of 40 CFR part 90. Manufacturers certifying to emission standards in 40 CFR part 1054 must meet the provisions of 40 CFR part 1054. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060 to the extent they apply to equipment manufacturers.

(b) Manufacturers required to certify to emission standards in 40 CFR part 1048 must meet the provisions of 40 CFR part 1048. Manufacturers certifying to emission standards in 40 CFR part 1048 pursuant to the voluntary certification program must meet the requirements in Table 4 to this subpart as well as the standards in 40 CFR 1048.101.

(c) For manufacturers of stationary SI internal combustion engines participating in the voluntary certification program and certifying engines to Table 1 to this subpart, Table 4 to this subpart shows which parts of the mobile source provisions in 40 CFR parts 1048, 1065, and 1068 apply to you. Compliance with the deterioration factor provisions under 40 CFR 1048.205(n) and 1048.240 will be required for engines built new on and after January 1, 2010. Prior to January 1, 2010, manufacturers of stationary internal combustion engines participating in the voluntary certification program have the option to develop their own deterioration factors based on an engineering analysis.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008]

DEFINITIONS

§ 60.4248 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 90.105, 40 CFR 1054.107, and 40 CFR 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first. You may request in your application for certification that we approve a shorter certified emissions life for an engine family. We may approve a shorter certified emissions life, in hours of engine operation but not in years, if we determine that these engines will rarely operate longer than the shorter certified emissions life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information. The certified emissions life value may not be shorter than any of the following:

(i) 1,000 hours of operation.

(ii) Your recommended overhaul interval.

(iii) Your mechanical warranty for the engine.

Certified stationary internal combustion engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as appropriate.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems

(except emissions control equipment), and any ancillary components and subcomponents comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

(1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.

(2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.

(3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and carbon dioxide (CO_2).

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4243(d) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4243(d), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4243(d).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4243(d)(2)(ii) or (iii) and § 60.4243(d)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of ''manufacturer'' in this section.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production.

Manufacturer has the meaning given in section 216(1) of the Clean Air Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1048.801.

Model year means the calendar year in which an engine is manufactured (see ''date of manufacture''), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see ''date of manufacture''), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other nonstationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see ''date of manufacture'').

Natural gas means a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Pipeline-quality natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by a supplier through a pipeline. Pipeline-quality natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units per standard cubic foot.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to June 12, 2006, with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to either: a gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE

differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Stationary internal combustion engine test cell/stand means an engine test cell/stand, as defined in 40 CFR part 63, subpart PPPPP, that tests stationary ICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Subpart means 40 CFR part 60, subpart JJJJ.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

Volatile organic compounds means volatile organic compounds as defined in 40 CFR 51.100(s).

Voluntary certification program means an optional engine certification program that manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to participate in to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable.

[73 FR 3591, Jan. 18, 2008, as amended at 73 FR 59177, Oct. 8, 2008; 76 FR 37974, June 28, 2011; 78 FR 6698, Jan. 30, 2013]

TABLE 1 TO SUBPART JJJJ OF PART 60—NO_X, CO, AND VOC EMISSION STANDARDS FOR STATIONARY NON-EMERGENCY SI ENGINES ≥100 HP (EXCEPT GASOLINE AND RICH BURN LPG), STATIONARY SI LANDFILL/DIGESTER GAS ENGINES, AND STATIONARY EMERGENCY ENGINES >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards [a]					
			g/HP-hr			ppmvd at 15% O_2		
			NO_X	CO	VOC [d]	NO_X	CO	VOC [d]
Non-Emergency SI Natural Gas [b] and Non-Emergency SI Lean Burn LPG [b].	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG.	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350).	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP≥500	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500≤HP<1,350).	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	[c] 10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

[a] Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O_2.

[b] Owners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.

[c] The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO_X + HC.

[d] For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

[76 FR 37975, June 28, 2011]

TABLE 2 TO SUBPART JJJJ OF PART 60—REQUIREMENTS FOR PERFORMANCE TESTS

Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary SI internal combustion engine demonstrating compliance according to § 60.4244.	a. limit the concentration of NO_X in the stationary SI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, Appendix A or ASTM Method D6522–00 (Reapproved 2005).[a c]	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b] of 40 CFR part 60, appendix A or ASTM Method D6522–00 (Reapproved 2005).[a c]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 19 of 40 CFR part 60, appendix A.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03.[e]	(c) Measurements to determine moisture must be made at the same time as the measurementfor NO_X concentration.
		v. Measure NO_X at the exhaust of the stationary internal combustion engine.	(5) Method 7E of 40 CFR part 60, appendix A, Method D6522–00 (Reapproved 2005)[a c], Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03.[e]	(d) Results of this test consist of the average of the three 1-hour or longer runs.
	b. limit the concentration of CO in the stationary SI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A or ASTM Method D6522–00 (Reapproved 2005).[a c]	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b] of 40 CFR part 60, appendix A or ASTM Method D6522–00 (Reapproved 2005).[a c]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for CO concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 19 of 40 CFR part 60, appendix A.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03.[e]	(c) Measurements to determine moisture must be made at the same time as the measurement for CO concentration.

Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests

For each	Complying with the requirement to	You must	Using	According to the following requirements
		v. Measure CO at the exhaust of the stationary internal combustion engine.	(5) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522–00 (Reapproved 2005) [a c], Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03. [e]	(d) Results of this test consist of the average of the three 1-hour or longer runs.
	c. limit the concentration of VOC in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A.	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B [b] of 40 CFR part 60, appendix A or ASTM Method D6522–00 (Reapproved 2005). [a c]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for VOC concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 19 of 40 CFR part 60, appendix A.	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03. [e]	(c) Measurements to determine moisture must be made at the same time as the measurementfor VOC concentration.
		v. Measure VOC at the exhaust of the stationary internal combustion engine.	(5) Methods 25A and 18 of 40 CFR part 60, appendix A, Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 of 40 CFR part 60, appendix A, [c d] Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348–03. [e]	(d) Results of this test consist of the average of the three 1-hour or longer runs.

[a] You may petition the Administrator for approval to use alternative methods for portable analyzer.
[b] You may use ASME PTC 19.10–1981, Flue and Exhaust Gas Analyses, for measuring the O_2 content of the exhaust gas as an alternative to EPA Method 3B.
[c] You may use EPA Method 18 of 40 CFR part 60, appendix, provided that you conduct an adequate presurvey test prior to the emissions test, such as the one described in OTM 11 on EPA's Web site (*http://www.epa.gov/ttn/emc/prelim/otm11.pdf*).
[d] You may use ASTM D6420–99 (2004), Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography/Mass Spectrometry as an alternative to EPA Method 18 for measuring total nonmethane organic.
[e] Incorporated by reference, see 40 CFR 60.17.

[76 FR 37975, June 28, 2011, as amended at 78 FR 6698, Jan. 30, 2013]

Table 3 to Subpart JJJJ of Part 60—Applicability of General Provisions to Subpart JJJJ

[As stated in § 60.4246, you must comply with the following applicable General Provisions]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions.	Yes.	
§ 60.2	Definitions	Yes	Additional terms defined in § 60.4248.
§ 60.3	Units and abbreviations	Yes.	
§ 60.4	Address	Yes.	

[As stated in § 60.4246, you must comply with the following applicable General Provisions]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.5	Determination of construction or modification.	Yes.	
§ 60.6	Review of plans	Yes.	
§ 60.7	Notification and Record-keeping.	Yes	Except that § 60.7 only applies as specified in § 60.4245.
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to owners and operators who are subject to performance testing in subpart JJJJ.
§ 60.9	Availability of information	Yes.	
§ 60.10	State Authority	Yes.	
§ 60.11	Compliance with standards and maintenance requirements.	Yes	Requirements are specified in subpart JJJJ.
§ 60.12	Circumvention	Yes.	
§ 60.13	Monitoring requirements	No.	
§ 60.14	Modification	Yes.	
§ 60.15	Reconstruction	Yes.	
§ 60.16	Priority list	Yes.	
§ 60.17	Incorporations by reference	Yes.	
§ 60.18	General control device requirements.	No.	
§ 60.19	General notification and reporting requirements.	Yes.	

TABLE 4 TO SUBPART JJJJ OF PART 60—APPLICABILITY OF MOBILE SOURCE PROVISIONS FOR MANUFACTURERS PARTICIPATING IN THE VOLUNTARY CERTIFICATION PROGRAM AND CERTIFYING STATIONARY SI ICE TO EMISSION STANDARDS IN TABLE 1 OF SUBPART JJJJ

[As stated in § 60.4247, you must comply with the following applicable mobile source provisions if you are a manufacturer participating in the voluntary certification program and certifying stationary SI ICE to emission standards in Table 1 of subpart JJJJ]

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
1048 subpart A	Overview and Applicability	Yes.	
1048 subpart B	Emission Standards and Related Requirements.	Yes	Except for the specific sections below.
1048.101	Exhaust Emission Standards	No.	
1048.105	Evaporative Emission Standards.	No.	
1048.110	Diagnosing Malfunctions	No.	
1048.140	Certifying Blue Sky Series Engines.	No.	
1048.145	Interim Provisions	No.	
1048 subpart C	Certifying Engine Families	Yes	Except for the specific sections below.
1048.205(b)	AECD reporting	Yes.	
1048.205(c)	OBD Requirements	No.	
1048.205(n)	Deterioration Factors	Yes	Except as indicated in 60.4247(c).
1048.205(p)(1)	Deterioration Factor Discussion.	Yes.	
1048.205(p)(2)	Liquid Fuels as they require	No.	
1048.240(b)(c)(d)	Deterioration Factors	Yes.	
1048 subpart D	Testing Production-Line Engines.	Yes.	
1048 subpart E	Testing In-Use Engines	No.	
1048 subpart F	Test Procedures	Yes.	
1065.5(a)(4)	Raw sampling (refers reader back to the specific emissions regulation for guidance).	Yes.	
1048 subpart G	Compliance Provisions	Yes.	
1048 subpart H	Reserved.		
1048 subpart I	Definitions and Other Reference Information.	Yes.	
1048 appendix I and II	Yes.		

[As stated in § 60.4247, you must comply with the following applicable mobile source provisions if you are a manufacturer participating in the voluntary certification program and certifying stationary SI ICE to emission standards in Table 1 of subpart JJJJ]

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
1065 (all subparts)	Engine Testing Procedures	Yes	Except for the specific section below.
1065.715	Test Fuel Specifications for Natural Gas.	No.	
1068 (all subparts)	General Compliance Provisions for Nonroad Programs.	Yes	Except for the specific sections below.
1068.245	Hardship Provisions for Unusual Circumstances.	No.	
1068.250	Hardship Provisions for Small-Volume Manufacturers.	No.	
1068.255	Hardship Provisions for Equipment Manufacturers and Secondary Engine Manufacturers.	No.	

Subpart KKKK—Standards of Performance for Stationary Combustion Turbines

SOURCE: 71 FR 38497, July 6, 2006, unless otherwise noted.

INTRODUCTION

§ 60.4300 What is the purpose of this subpart?

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.

APPLICABILITY

§ 60.4305 Does this subpart apply to my stationary combustion turbine?

(a) If you are the owner or operator of a stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005, your turbine is subject to this subpart. Only heat input to the combustion turbine should be included when determining whether or not this subpart is applicable to your turbine. Any additional heat input to associated heat recovery steam generators (HRSG) or duct burners should not be included when determining your peak heat input. However, this subpart does apply to emissions from any associated HRSG and duct burners.

(b) Stationary combustion turbines regulated under this subpart are exempt from the requirements of subpart GG of this part. Heat recovery steam generators and duct burners regulated under this subpart are exempted from the requirements of subparts Da, Db, and Dc of this part.

§ 60.4310 What types of operations are exempt from these standards of performance?

(a) Emergency combustion turbines, as defined in § 60.4420(i), are exempt from the nitrogen oxides (NO_X) emission limits in § 60.4320.

(b) Stationary combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements are exempt from the NO_X emission limits in § 60.4320 on a case-by-case basis as determined by the Administrator.

(c) Stationary combustion turbines at integrated gasification combined cycle electric utility steam generating units that are subject to subpart Da of this part are exempt from this subpart.

(d) Combustion turbine test cells/stands are exempt from this subpart.

EMISSION LIMITS

§ 60.4315 What pollutants are regulated by this subpart?

The pollutants regulated by this subpart are nitrogen oxide (NO_X) and sulfur dioxide (SO_2).

§ 60.4320 What emission limits must I meet for nitrogen oxides (NO_X)?

(a) You must meet the emission limits for NO_X specified in Table 1 to this subpart.

(b) If you have two or more turbines that are connected to a single generator, each turbine must meet the emission limits for NO_X.

§ 60.4325 What emission limits must I meet for NO_X if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?

You must meet the emission limits specified in Table 1 to this subpart. If your total heat input is greater than or equal to 50 percent natural gas, you must meet the corresponding limit for a natural gas-fired turbine when you are burning that fuel. Similarly, when your total heat input is greater than 50 percent distillate oil and fuels other than natural gas, you must meet the corresponding limit for distillate oil and fuels other than natural gas for the duration of the time that you burn that particular fuel.

§ 60.4330 What emission limits must I meet for sulfur dioxide (SO_2)?

(a) If your turbine is located in a continental area, you must comply with either paragraph (a)(1), (a)(2), or (a)(3) of this section. If your turbine is located in Alaska, you do not have to comply with the requirements in paragraph (a) of this section until January 1, 2008.

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO_2 in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output;

(2) You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement; or

(3) For each stationary combustion turbine burning at least 50 percent biogas on a calendar month basis, as determined based on total heat input, you must not cause to be discharged into the atmosphere from the affected source any gases that contain SO_2 in excess of 65 ng SO_2/J (0.15 lb SO_2/MMBtu) heat input.

(b) If your turbine is located in a noncontinental area or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit, you must comply with one or the other of the following conditions:

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO_2 in excess of 780 ng/J (6.2 lb/MWh) gross output, or

(2) You must not burn in the subject stationary combustion turbine any fuel which contains total sulfur with potential sulfur emissions in excess of 180 ng SO_2/J (0.42 lb SO_2/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.

[71 FR 38497, July 6, 2006, as amended at 74 FR 11861, Mar. 20, 2009]

GENERAL COMPLIANCE REQUIREMENTS

§ 60.4333 What are my general requirements for complying with this subpart?

(a) You must operate and maintain your stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

(b) When an affected unit with heat recovery utilizes a common steam header with one or more combustion turbines, the owner or operator shall either:

(1) Determine compliance with the applicable NO_X emissions limits by measuring the emissions combined with the emissions from the other

unit(s) utilizing the common heat recovery unit; or

(2) Develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the heat recovery unit for each of the affected combustion turbines. The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of emissions related under this part.

MONITORING

§ 60.4335 How do I demonstrate compliance for NO_X if I use water or steam injection?

(a) If you are using water or steam injection to control NO_X emissions, you must install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine when burning a fuel that requires water or steam injection for compliance.

(b) Alternatively, you may use continuous emission monitoring, as follows:

(1) Install, certify, maintain, and operate a continuous emission monitoring system (CEMS) consisting of a NO_X monitor and a diluent gas (oxygen (O_2) or carbon dioxide (CO_2)) monitor, to determine the hourly NO_X emission rate in parts per million (ppm) or pounds per million British thermal units (lb/MMBtu); and

(2) For units complying with the output-based standard, install, calibrate, maintain, and operate a fuel flow meter (or flow meters) to continuously measure the heat input to the affected unit; and

(3) For units complying with the output-based standard, install, calibrate, maintain, and operate a watt meter (or meters) to continuously measure the gross electrical output of the unit in megawatt-hours; and

(4) For combined heat and power units complying with the output-based standard, install, calibrate, maintain, and operate meters for useful recovered energy flow rate, temperature, and pressure, to continuously measure the total thermal energy output in British thermal units per hour (Btu/h).

§ 60.4340 How do I demonstrate continuous compliance for NO_X if I do not use water or steam injection?

(a) If you are not using water or steam injection to control NO_X emissions, you must perform annual performance tests in accordance with § 60.4400 to demonstrate continuous compliance. If the NO_X emission result from the performance test is less than or equal to 75 percent of the NO_X emission limit for the turbine, you may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_X emission limit for the turbine, you must resume annual performance tests.

(b) As an alternative, you may install, calibrate, maintain and operate one of the following continuous monitoring systems:

(1) Continuous emission monitoring as described in §§ 60.4335(b) and 60.4345, or

(2) Continuous parameter monitoring as follows:

(i) For a diffusion flame turbine without add-on selective catalytic reduction (SCR) controls, you must define parameters indicative of the unit's NO_X formation characteristics, and you must monitor these parameters continuously.

(ii) For any lean premix stationary combustion turbine, you must continuously monitor the appropriate parameters to determine whether the unit is operating in low-NO_X mode.

(iii) For any turbine that uses SCR to reduce NO_X emissions, you must continuously monitor appropriate parameters to verify the proper operation of the emission controls.

(iv) For affected units that are also regulated under part 75 of this chapter, with state approval you can monitor the NO_X emission rate using the methodology in appendix E to part 75 of this chapter, or the low mass emissions methodology in § 75.19, the requirements of this paragraph (b) may be met

by performing the parametric monitoring described in section 2.3 of part 75 appendix E or in § 75.19(c)(1)(iv)(H).

§ 60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?

If the option to use a NO_X CEMS is chosen:

(a) Each NO_X diluent CEMS must be installed and certified according to Performance Specification 2 (PS 2) in appendix B to this part, except the 7-day calibration drift is based on unit operating days, not calendar days. With state approval, Procedure 1 in appendix F to this part is not required. Alternatively, a NO_X diluent CEMS that is installed and certified according to appendix A of part 75 of this chapter is acceptable for use under this subpart. The relative accuracy test audit (RATA) of the CEMS shall be performed on a lb/MMBtu basis.

(b) As specified in § 60.13(e)(2), during each full unit operating hour, both the NO_X monitor and the diluent monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained with each monitor for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required for each monitor to validate the NO_X emission rate for the hour.

(c) Each fuel flowmeter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. Alternatively, with state approval, fuel flowmeters that meet the installation, certification, and quality assurance requirements of appendix D to part 75 of this chapter are acceptable for use under this subpart.

(d) Each watt meter, steam flow meter, and each pressure or temperature measurement device shall be installed, calibrated, maintained, and operated according to manufacturer's instructions.

(e) The owner or operator shall develop and keep on-site a quality assurance (QA) plan for all of the continuous monitoring equipment described in paragraphs (a), (c), and (d) of this section. For the CEMS and fuel flow meters, the owner or operator may, with state approval, satisfy the requirements of this paragraph by implementing the QA program and plan described in section 1 of appendix B to part 75 of this chapter.

§ 60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?

For purposes of identifying excess emissions:

(a) All CEMS data must be reduced to hourly averages as specified in § 60.13(h).

(b) For each unit operating hour in which a valid hourly average, as described in § 60.4345(b), is obtained for both NO_X and diluent monitors, the data acquisition and handling system must calculate and record the hourly NO_X emission rate in units of ppm or lb/MMBtu, using the appropriate equation from method 19 in appendix A of this part. For any hour in which the hourly average O_2 concentration exceeds 19.0 percent O_2 (or the hourly average CO_2 concentration is less than 1.0 percent CO_2), a diluent cap value of 19.0 percent O_2 or 1.0 percent CO_2 (as applicable) may be used in the emission calculations.

(c) Correction of measured NO_X concentrations to 15 percent O_2 is not allowed.

(d) If you have installed and certified a NO_X diluent CEMS to meet the requirements of part 75 of this chapter, states can approve that only quality assured data from the CEMS shall be used to identify excess emissions under this subpart. Periods where the missing data substitution procedures in subpart D of part 75 are applied are to be reported as monitor downtime in the excess emissions and monitoring performance report required under § 60.7(c).

(e) All required fuel flow rate, steam flow rate, temperature, pressure, and megawatt data must be reduced to hourly averages.

(f) Calculate the hourly average NO_X emission rates, in units of the emission standards under §60.4320, using either ppm for units complying with the concentration limit or the following equation for units complying with the output based standard:

(1) For simple-cycle operation:

$$E = \frac{(NO_X)_h * (HI)_h}{P} \qquad \text{(Eq. 1)}$$

Where:

E = hourly NO_X emission rate, in lb/MWh,

$(NO_X)_h$ = hourly NO_X emission rate, in lb/MMBtu,

$(HI)_h$ = hourly heat input rate to the unit, in MMBtu/h, measured using the fuel flowmeter(s), *e.g.*, calculated using Equation D–15a in appendix D to part 75 of this chapter, and

P = gross energy output of the combustion turbine in MW.

(2) For combined-cycle and combined heat and power complying with the output-based standard, use Equation 1 of this subpart, except that the gross energy output is calculated as the sum of the total electrical and mechanical energy generated by the combustion turbine, the additional electrical or mechanical energy (if any) generated by the steam turbine following the heat recovery steam generator, and 100 percent of the total useful thermal energy output that is not used to generate additional electricity or mechanical output, expressed in equivalent MW, as in the following equations:

$$P = (Pe)_t + (Pe)_c + Ps + Po \qquad \text{(Eq. 2)}$$

Where:

P = gross energy output of the stationary combustion turbine system in MW.

$(Pe)_t$ = electrical or mechanical energy output of the combustion turbine in MW,

$(Pe)_c$ = electrical or mechanical energy output (if any) of the steam turbine in MW, and

$$Ps = \frac{Q * H}{3.413 \times 10^6 \text{ Btu/MWh}} \qquad \text{(Eq. 3)}$$

Where:

Ps = useful thermal energy of the steam, measured relative to ISO conditions, not used to generate additional electric or mechanical output, in MW,

Q = measured steam flow rate in lb/h,

H = enthalpy of the steam at measured temperature and pressure relative to ISO conditions, in Btu/lb, and $3.413 \times 10_6$ = conversion from Btu/h to MW.

Po = other useful heat recovery, measured relative to ISO conditions, not used for steam generation or performance enhancement of the combustion turbine.

(3) For mechanical drive applications complying with the output-based standard, use the following equation:

$$E = \frac{(NO_X)_m}{BL * AL} \qquad \text{(Eq. 4)}$$

Where:

E = NO_X emission rate in lb/MWh,

$(NO_X)_m$ = NO_X emission rate in lb/h,

BL = manufacturer's base load rating of turbine, in MW, and

AL = actual load as a percentage of the base load.

(g) For simple cycle units without heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 4-hour rolling average basis, as described in §60.4380(b)(1).

(h) For combined cycle and combined heat and power units with heat recovery, use the calculated hourly average emission rates from paragraph (f) of this section to assess excess emissions on a 30 unit operating day rolling average basis, as described in §60.4380(b)(1).

§60.4355 How do I establish and document a proper parameter monitoring plan?

(a) The steam or water to fuel ratio or other parameters that are continuously monitored as described in §§60.4335 and 60.4340 must be monitored during the performance test required under §60.8, to establish acceptable values and ranges. You may supplement the performance test data with engineering analyses, design specifications, manufacturer's recommendations and other relevant information to define the acceptable parametric ranges more precisely. You must develop and keep on-site a parameter monitoring plan which explains the procedures used to document proper operation of the NO_X emission controls. The plan must:

(1) Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NO_X emission controls,

(2) Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established,

(3) Explain the process you will use to make certain that you obtain data that are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable),

(4) Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data,

(5) Describe the frequency of monitoring and the data collection procedures which you will use (e.g., you are using a computerized data acquisition over a number of discrete data points with the average (or maximum value) being used for purposes of determining whether an exceedance has occurred), and

(6) Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer recommendation, you must explain the reasons for the differences. You must submit the data supporting the justification, but you may refer to generally available sources of information used to support the justification. You may rely on engineering assessments and other data, provided you demonstrate factors which assure compliance or explain why performance testing is unnecessary to establish indicator ranges. When establishing indicator ranges, you may choose to simplify the process by treating the parameters as if they were correlated. Using this assumption, testing can be divided into two cases:

(i) All indicators are significant only on one end of range (e.g., for a thermal incinerator controlling volatile organic compounds (VOC) it is only important to insure a minimum temperature, not a maximum). In this case, you may conduct your study so that each parameter is at the significant limit of its range while you conduct your emissions testing. If the emissions tests show that the source is in compliance at the significant limit of each parameter, then as long as each parameter is within its limit, you are presumed to be in compliance.

(ii) Some or all indicators are significant on both ends of the range. In this case, you may conduct your study so that each parameter that is significant at both ends of its range assumes its extreme values in all possible combinations of the extreme values (either single or double) of all of the other parameters. For example, if there were only two parameters, A and B, and A had a range of values while B had only a minimum value, the combinations would be A high with B minimum and A low with B minimum. If both A and B had a range, the combinations would be A high and B high, A low and B low, A high and B low, A low and B high. For the case of four parameters all having a range, there are 16 possible combinations.

(b) For affected units that are also subject to part 75 of this chapter and that have state approval to use the low mass emissions methodology in § 75.19 or the NO_X emission measurement methodology in appendix E to part 75, you may meet the requirements of this paragraph by developing and keeping on-site (or at a central location for unmanned facilities) a QA plan, as described in § 75.19(e)(5) or in section 2.3 of appendix E to part 75 of this chapter and section 1.3.6 of appendix B to part 75 of this chapter.

§ 60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?

You must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in § 60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in § 60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see § 60.17), which measure the major sulfur compounds, may be used.

§ 60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?

You may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input for units located in continental areas and 180 ng SO_2/J (0.42 lb SO_2/MMBtu) heat input for units located in noncontinental areas or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit. You must use one of the following sources of information to make the required demonstration:

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less and 0.4 weight percent (4,000 ppmw) or less for noncontinental areas, the total sulfur content for natural gas use in continental areas is 20 grains of sulfur or less per 100 standard cubic feet and 140 grains of sulfur or less per 100 standard cubic feet for noncontinental areas, has potential sulfur emissions of less than less than 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input for continental areas and has potential sulfur emissions of less than less than 180 ng SO_2/J (0.42 lb SO_2/MMBtu) heat input for noncontinental areas; or

(b) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO_2/J (0.060 lb SO_2/MMBtu) heat input for continental areas or 180 ng SO_2/J (0.42 lb SO_2/MMBtu) heat input for noncontinental areas. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.

§ 60.4370 How often must I determine the sulfur content of the fuel?

The frequency of determining the sulfur content of the fuel must be as follows:

(a) *Fuel oil.* For fuel oil, use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to part 75 of this chapter (*i.e.*, flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank).

(b) *Gaseous fuel.* If you elect not to demonstrate sulfur content using options in § 60.4365, and the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel must be determined and recorded once per unit operating day.

(c) *Custom schedules.* Notwithstanding the requirements of paragraph (b) of this section, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (c)(1) and (c)(2) of this section, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in § 60.4330.

(1) The two custom sulfur monitoring schedules set forth in paragraphs (c)(1)(i) through (iv) and in paragraph (c)(2) of this section are acceptable, without prior Administrative approval:

(i) The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this subpart. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as specified in paragraph (c)(1)(ii), (iii), or (iv) of this section, as applicable.

(ii) If none of the 30 daily measurements of the fuel's total sulfur content exceeds half the applicable standard, subsequent sulfur content monitoring may be performed at 12-month intervals. If any of the samples taken at 12-month intervals has a total sulfur content greater than half but less than the applicable limit, follow the procedures in paragraph (c)(1)(iii) of this section. If any measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section.

(iii) If at least one of the 30 daily measurements of the fuel's total sulfur content is greater than half but less than the applicable limit, but none exceeds the applicable limit, then:

(A) Collect and analyze a sample every 30 days for 3 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(B) of this section.

(B) Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(C) of this section.

(C) Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, continue to monitor at this frequency.

(iv) If a sulfur content measurement exceeds the applicable limit, immediately begin daily monitoring according to paragraph (c)(1)(i) of this section. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than the applicable limit, are obtained. At that point, the applicable procedures of paragraph (c)(1)(ii) or (iii) of this section shall be followed.

(2) The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in section 2.3.6 of appendix D to part 75 of this chapter to determine a custom sulfur sampling schedule, as follows:

(i) If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains/100 scf, no additional monitoring of the sulfur content of the gas is required, for the purposes of this subpart.

(ii) If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains/100 scf, but none of the sulfur content values (when converted to weight percent sulfur) exceeds half the applicable limit, then the minimum required sampling frequency shall be one sample at 12 month intervals.

(iii) If any sample result exceeds half the applicable limit, but none exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iii) of this section.

(iv) If the sulfur content of any of the 720 hourly samples exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iv) of this section.

REPORTING

§ 60.4375 What reports must I submit?

(a) For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under this subpart, you must submit reports of excess emissions and monitor downtime, in accordance with § 60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.

(b) For each affected unit that performs annual performance tests in accordance with § 60.4340(a), you must submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test.

§ 60.4380 How are excess emissions and monitor downtime defined for NO_X?

For the purpose of reports required under § 60.7(c), periods of excess emissions and monitor downtime that must be reported are defined as follows:

(a) For turbines using water or steam to fuel ratio monitoring:

(1) An excess emission is any unit operating hour for which the 4-hour rolling average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water to fuel ratio needed to demonstrate compliance with § 60.4320, as established during the performance test required in § 60.8. Any unit operating hour in which no water or steam is injected into the turbine when a fuel is being burned that requires water or steam injection for NO_X control will also be considered an excess emission.

(2) A period of monitor downtime is any unit operating hour in which water or steam is injected into the turbine,

but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

(3) Each report must include the average steam or water to fuel ratio, average fuel consumption, and the combustion turbine load during each excess emission.

(b) For turbines using continuous emission monitoring, as described in §§ 60.4335(b) and 60.4345:

(1) An excess emissions is any unit operating period in which the 4-hour or 30-day rolling average NO_X emission rate exceeds the applicable emission limit in § 60.4320. For the purposes of this subpart, a ''4-hour rolling average NO_X emission rate'' is the arithmetic average of the average NO_X emission rate in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO_X emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO_X emission rate is obtained for at least 3 of the 4 hours. For the purposes of this subpart, a ''30-day rolling average NO_X emission rate'' is the arithmetic average of all hourly NO_X emission data in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO_X emissions rates for the preceding 30 unit operating days if a valid NO_X emission rate is obtained for at least 75 percent of all operating hours.

(2) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO_X concentration, CO2 or O_2 concentration, fuel flow rate, steam flow rate, steam temperature, steam pressure, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.

(3) For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

(c) For turbines required to monitor combustion parameters or parameters that document proper operation of the NO_X emission controls:

(1) An excess emission is a 4-hour rolling unit operating hour average in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the unit.

(2) A period of monitor downtime is a unit operating hour in which any of the required parametric data are either not recorded or are invalid.

§ 60.4385 How are excess emissions and monitoring downtime defined for SO_2?

If you choose the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

(a) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(b) If the option to sample each delivery of fuel oil has been selected, you must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. You must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and you must evaluate excess emissions according to paragraph (a) of this section. When all of the fuel from the delivery has been burned, you may resume using the as-delivered sampling option.

(c) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

§ 60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?

(a) If you operate an emergency combustion turbine, you are exempt from the NO_X limit and must submit an initial report to the Administrator stating your case.

(b) Combustion turbines engaged by manufacturers in research and development of equipment for both combustion turbine emission control techniques and combustion turbine efficiency improvements may be exempted from the NO_X limit on a case-by-case basis as determined by the Administrator. You must petition for the exemption.

§ 60.4395 When must I submit my reports?

All reports required under § 60.7(c) must be postmarked by the 30th day following the end of each 6-month period.

PERFORMANCE TESTS

§ 60.4400 How do I conduct the initial and subsequent performance tests, regarding NO_X?

(a) You must conduct an initial performance test, as required in § 60.8. Subsequent NO_X performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

(1) There are two general methodologies that you may use to conduct the performance tests. For each test run:

(i) Measure the NO_X concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in appendix A of this part. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then, use the following equation to calculate the NO_X emission rate:

$$E = \frac{1.194 \times 10^{-7} * (NO_X)_c * Q_{std}}{P} \qquad \text{(Eq. 5)}$$

Where:

E = NO_X emission rate, in lb/MWh

1.194×10^{-7} = conversion constant, in lb/dscf-ppm

$(NO_X)_c$ = average NO_X concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to § 60.4350(f)(2); or

(ii) Measure the NO_X and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in appendix A of this part. Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the NO_X emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in § 60.4350(f) to calculate the NO_X emission rate in lb/MWh.

(2) Sampling traverse points for NO_X and (if applicable) diluent gas are to be selected following EPA Method 20 or

EPA Method 1 (non-particulate procedures), and sampled for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

(3) Notwithstanding paragraph (a)(2) of this section, you may test at fewer points than are specified in EPA Method 1 or EPA Method 20 in appendix A of this part if the following conditions are met:

(i) You may perform a stratification test for NO_X and diluent pursuant to

(A) [Reserved], or

(B) The procedures specified in section 6.5.6.1(a) through (e) of appendix A of part 75 of this chapter.

(ii) Once the stratification sampling is completed, you may use the following alternative sample point selection criteria for the performance test:

(A) If each of the individual traverse point NO_X concentrations is within ±10 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±5ppm or ±0.5 percent CO_2 (or O_2) from the mean for all traverse points, then you may use three points (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The three points must be located along the measurement line that exhibited the highest average NO_X concentration during the stratification test; or

(B) For turbines with a NO_X standard greater than 15 ppm @ 15% O_2, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_X concentrations is within ±5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±3ppm or ±0.3 percent CO_2 (or O_2) from the mean for all traverse points; or

(C) For turbines with a NO_X standard less than or equal to 15 ppm @ 15% O_2, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_X concentrations is within ±2.5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±1ppm or ±0.15 percent CO_2 (or O_2) from the mean for all traverse points.

(b) The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. You may perform testing at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. You must conduct three separate test runs for each performance test. The minimum time per run is 20 minutes.

(1) If the stationary combustion turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.

(2) For a combined cycle and CHP turbine systems with supplemental heat (duct burner), you must measure the total NO_X emissions after the duct burner rather than directly after the turbine. The duct burner must be in operation during the performance test.

(3) If water or steam injection is used to control NO_X with no additional post-combustion NO_X control and you choose to monitor the steam or water to fuel ratio in accordance with § 60.4335, then that monitoring system must be operated concurrently with each EPA Method 20 or EPA Method 7E run and must be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the applicable § 60.4320 NO_X emission limit.

(4) Compliance with the applicable emission limit in § 60.4320 must be demonstrated at each tested load level. Compliance is achieved if the three-run arithmetic average NO_X emission rate at each tested level meets the applicable emission limit in § 60.4320.

(5) If you elect to install a CEMS, the performance evaluation of the CEMS may either be conducted separately or (as described in § 60.4405) as part of the initial performance test of the affected unit.

(6) The ambient temperature must be greater than 0 °F during the performance test.

§ 60.4405 How do I perform the initial performance test if I have chosen to install a NO_X-diluent CEMS?

If you elect to install and certify a NO_X-diluent CEMS under § 60.4345, then the initial performance test required under § 60.8 may be performed in the following alternative manner:

(a) Perform a minimum of nine RATA reference method runs, with a minimum time per run of 21 minutes, at a single load level, within plus or minus 25 percent of 100 percent of peak load. The ambient temperature must be greater than 0 °F during the RATA runs.

(b) For each RATA run, concurrently measure the heat input to the unit using a fuel flow meter (or flow meters) and measure the electrical and thermal output from the unit.

(c) Use the test data both to demonstrate compliance with the applicable NO_X emission limit under § 60.4320 and to provide the required reference method data for the RATA of the CEMS described under § 60.4335.

(d) Compliance with the applicable emission limit in § 60.4320 is achieved if the arithmetic average of all of the NO_X emission rates for the RATA runs, expressed in units of ppm or lb/MWh, does not exceed the emission limit.

§ 60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?

If you have chosen to monitor combustion parameters or parameters indicative of proper operation of NO_X emission controls in accordance with § 60.4340, the appropriate parameters must be continuously monitored and recorded during each run of the initial performance test, to establish acceptable operating ranges, for purposes of the parameter monitoring plan for the affected unit, as specified in § 60.4355.

§ 60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

(a) You must conduct an initial performance test, as required in § 60.8. Subsequent SO_2 performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). There are three methodologies that you may use to conduct the performance tests.

(1) If you choose to periodically determine the sulfur content of the fuel combusted in the turbine, a representative fuel sample would be collected following ASTM D5287 (incorporated by reference, see § 60.17) for natural gas or ASTM D4177 (incorporated by reference, see § 60.17) for oil. Alternatively, for oil, you may follow the procedures for manual pipeline sampling in section 14 of ASTM D4057 (incorporated by reference, see § 60.17). The fuel analyses of this section may be performed either by you, a service contractor retained by you, the fuel vendor, or any other qualified agency. Analyze the samples for the total sulfur content of the fuel using:

(i) For liquid fuels, ASTM D129, or alternatively D1266, D1552, D2622, D4294, or D5453 (all of which are incorporated by reference, see § 60.17); or

(ii) For gaseous fuels, ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see § 60.17).

(2) Measure the SO_2 concentration (in parts per million (ppm)), using EPA Methods 6, 6C, 8, or 20 in appendix A of this part. In addition, the American Society of Mechanical Engineers (ASME) standard, ASME PTC 19–10–1981–Part 10, ''Flue and Exhaust Gas Analyses,'' manual methods for sulfur dioxide (incorporated by reference, see § 60.17) can be used instead of EPA Methods 6 or 20. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then use the following equation to calculate the SO_2 emission rate:

$$E = \frac{1.664 \times 10^{-7} * (SO_2)_c * Q_{std}}{P} \qquad \text{(Eq. 6)}$$

Where:

E = SO_2 emission rate, in lb/MWh

1.664×10^{-7} = conversion constant, in lb/dscf-ppm

$(SO_2)_c$ = average SO_2 concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to § 60.4350(f)(2); or

(3) Measure the SO_2 and diluent gas concentrations, using either EPA Methods 6, 6C, or 8 and 3A, or 20 in appendix A of this part. In addition, you may use the manual methods for sulfur dioxide ASME PTC 19–10–1981–Part 10 (incorporated by reference, see § 60.17). Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the SO_2 emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in § 60.4350(f) to calculate the SO_2 emission rate in lb/MWh.

(b) [Reserved]

DEFINITIONS

§ 60.4420 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein will have the meaning given them in the Clean Air Act and in subpart A (General Provisions) of this part.

Biogas means gas produced by the anaerobic digestion or fermentation of organic matter including manure, sewage sludge, municipal solid waste, biodegradable waste, or any other biodegradable feedstock, under anaerobic conditions. Biogas is comprised primarily of methane and CO_2.

Combined cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to generate steam that is only used to create additional power output in a steam turbine.

Combined heat and power combustion turbine means any stationary combustion turbine which recovers heat from the exhaust gases to heat water or another medium, generate steam for useful purposes other than additional electric generation, or directly uses the heat in the exhaust gases for a useful purpose.

Combustion turbine model means a group of combustion turbines having the same nominal air flow, combustor inlet pressure, combustor inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure.

Combustion turbine test cell/stand means any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) combustion turbines.

Diffusion flame stationary combustion turbine means any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary combustion turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

Efficiency means the combustion turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output—based on the higher heating value of the fuel.

Emergency combustion turbine means any stationary combustion turbine which operates in an emergency situation. Examples include stationary combustion turbines used to produce power

for critical networks or equipment, including power supplied to portions of a facility, when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency combustion turbines.

Excess emissions means a specified averaging period over which either (1) the NO_X emissions are higher than the applicable emission limit in § 60.4320; (2) the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in § 60.4330; or (3) the recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

Gross useful output means the gross useful work performed by the stationary combustion turbine system. For units using the mechanical energy directly or generating only electricity, the gross useful work performed is the gross electrical or mechanical output from the turbine/generator set. For combined heat and power units, the gross useful work performed is the gross electrical or mechanical output plus the useful thermal output (i.e., thermal energy delivered to a process).

Heat recovery steam generating unit means a unit where the hot exhaust gases from the combustion turbine are routed in order to extract heat from the gases and generate steam, for use in a steam turbine or other device that utilizes steam. Heat recovery steam generating units can be used with or without duct burners.

Integrated gasification combined cycle electric utility steam generating unit means a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No solid coal is directly burned in the unit during operation.

ISO conditions means 288 Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

Lean premix stationary combustion turbine means any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture before delivery to the combustor. Mixing may occur before or in the combustion chamber. A lean premixed turbine may operate in diffusion flame mode during operating conditions such as startup and shutdown, extreme ambient temperature, or low or transient load.

Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, the Northern Mariana Islands, or offshore platforms.

Peak load means 100 percent of the manufacturer's design capacity of the combustion turbine at ISO conditions.

Regenerative cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine.

Simple cycle combustion turbine means any stationary combustion turbine which does not recover heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the

combustion turbine, or which does not recover heat from the combustion turbine exhaust gases for purposes other than enhancing the performance of the combustion turbine itself.

Stationary combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and subcomponents comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

Unit operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Unit operating hour means a clock hour during which any fuel is combusted in the affected unit. If the unit combusts fuel for the entire clock hour, it is considered to be a full unit operating hour. If the unit combusts fuel for only part of the clock hour, it is considered to be a partial unit operating hour.

Useful thermal output means the thermal energy made available for use in any industrial or commercial process, or used in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical or mechanical generation. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at 15 degrees Celsius and 101.325 kilopascals of pressure.

[71 FR 38497, July 6, 2006, as amended at 74 FR 11861, Mar. 20, 2009]

TABLE 1 TO SUBPART KKKK OF PART 60—NITROGEN OXIDE EMISSION LIMITS FOR NEW STATIONARY COMBUSTION TURBINES

Combustion turbine type	Combustion turbine heat input at peak load (HHV)	NO_X emission standard
New turbine firing natural gas, electric generating.	≤ 50 MMBtu/h	42 ppm at 15 percent O_2 or 290 ng/J of useful output (2.3 lb/MWh).
New turbine firing natural gas, mechanical drive.	≤ 50 MMBtu/h	100 ppm at 15 percent O_2 or 690 ng/J of useful output (5.5 lb/MWh).
New turbine firing natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	25 ppm at 15 percent O_2 or 150 ng/J of useful output (1.2 lb/MWh).
New, modified, or reconstructed turbine firing natural gas.	> 850 MMBtu/h	15 ppm at 15 percent O_2 or 54 ng/J of useful output (0.43 lb/MWh)
New turbine firing fuels other than natural gas, electric generating.	≤ 50 MMBtu/h	96 ppm at 15 percent O_2 or 700 ng/J of useful output (5.5 lb/MWh).
New turbine firing fuels other than natural gas, mechanical drive.	≤ 50 MMBtu/h	150 ppm at 15 percent O_2 or 1,100 ng/J of useful output (8.7 lb/MWh).
New turbine firing fuels other than natural gas.	> 50 MMBtu/h and ≤ 850 MMBtu/h	74 ppm at 15 percent O_2 or 460 ng/J of useful output (3.6 lb/MWh).
New, modified, or reconstructed turbine firing fuels other than natural gas.	> 850 MMBtu/h	42 ppm at 15 percent O_2 or 160 ng/J of useful output (1.3 lb/MWh).
Modified or reconstructed turbine	≤ 50 MMBtu/h	150 ppm at 15 percent O_2 or 1,100 ng/J of useful output (8.7 lb/MWh).
Modified or reconstructed turbine firing natural gas.	> 50 MMBtu/h and ≤ 850 MMBtu/h	42 ppm at 15 percent O_2 or 250 ng/J of useful output (2.0 lb/MWh).
Modified or reconstructed turbine firing fuels other than natural gas.	> 50 MMBtu/h and ≤ 850 MMBtu/h	96 ppm at 15 percent O_2 or 590 ng/J of useful output (4.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F.	≤ 30 MW output	150 ppm at 15 percent O_2 or 1,100 ng/J of useful output (8.7 lb/MWh).

Combustion turbine type	Combustion turbine heat input at peak load (HHV)	NO_X emission standard
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F.	> 30 MW output	96 ppm at 15 percent O_2 or 590 ng/J of useful output (4.7 lb/MWh).
Heat recovery units operating independent of the combustion turbine.	All sizes	54 ppm at 15 percent O_2 or 110 ng/J of useful output (0.86 lb/MWh).

Subpart LLLL—Standards of Performance for New Sewage Sludge Incineration Units

INTRODUCTION

§ 60.4760 What does this subpart do?

This subpart establishes new source performance standards for sewage sludge incineration (SSI) units. To the extent any requirement of this subpart is inconsistent with the requirements of subpart A of this part, the requirements of this subpart will apply.

§ 60.4765 When does this subpart become effective?

This subpart takes effect on *September 21, 2011*. Some of the requirements in this subpart apply to planning a SSI unit and must be completed even before construction is initiated on a SSI unit (*i.e.*, the preconstruction requirements in §§ 60.4800 and 60.4805). Other requirements such as the emission limits, emission standards, and operating limits apply after the SSI unit begins operation.

APPLICABILITY AND DELEGATION OF AUTHORITY

§ 60.4770 Does this subpart apply to my sewage sludge incineration unit?

Yes, your SSI unit is an affected source if it meets all the criteria specified in paragraphs (a) through (c) of this section.

(a) Your SSI unit is a SSI unit for which construction commenced after October 14, 2010 or for which modification commenced after September 21, 2011.

(b) Your SSI unit is a SSI unit as defined in § 60.4930.

(c) Your SSI unit is not exempt under § 60.4780.

§ 60.4775 What is a new sewage sludge incineration unit?

(a) A new SSI unit is a SSI unit that meets either of the two criteria specified in paragraph (a)(1) or (a)(2) of this section.

(1) Commenced construction after October 14, 2010.

(2) Commenced modification after September 21, 2011.

(b) Physical or operational changes made to your SSI unit to comply with the emission guidelines in subpart MMMM of this part (Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units) do not qualify as a modification under this subpart.

§ 60.4780 What sewage sludge incineration units are exempt from this subpart?

This subpart exempts combustion units that incinerate sewage sludge and are not located at a wastewater treatment facility designed to treat domestic sewage sludge. These units may be subject to another subpart of this part (*e.g.*, subpart CCCC of this part). The owner or operator of such a combustion unit must notify the Administrator of an exemption claim under this section.

§ 60.4785 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the Administrator, as defined in § 60.2, or a delegated authority such as your state, local, or tribal agency. If the Administrator has delegated authority to your state, local, or tribal agency, then that agency (as well as the Administrator) has the authority to implement and enforce this

subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your state, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency, the authorities contained in paragraph (c) of this section are retained by the Administrator and are not transferred to the state, local, or tribal agency.

(c) The authorities that will not be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (c)(8) of this section.

(1) Approval of alternatives to the emission limits and standards in Tables 1 and 2 to this subpart and operating limits established under § 60.4850.

(2) Approval of major alternatives to test methods.

(3) Approval of major alternatives to monitoring.

(4) Approval of major alternatives to recordkeeping and reporting.

(5) The requirements in § 60.4855.

(6) The requirements in § 60.4835(b)(2).

(7) Performance test and data reduction waivers under § 60.8(b).

(8) Preconstruction siting analysis in § 60.4800 and § 60.4805.

§ 60.4790 How are these new source performance standards structured?

These new source performance standards contain the nine major components listed in paragraphs (a) through (i) of this section.

(a) Preconstruction siting analysis.

(b) Operator training and qualification.

(c) Emission limits, emission standards, and operating limits.

(d) Initial compliance requirements.

(e) Continuous compliance requirements.

(f) Performance testing, monitoring, and calibration requirements.

(g) Recordkeeping and reporting.

(h) Definitions.

(i) Tables.

§ 60.4795 Do all nine components of these new source performance standards apply at the same time?

No. You must meet the preconstruction siting analysis requirements before you commence construction of the SSI unit. The operator training and qualification, emission limits, emission standards, operating limits, performance testing, and compliance, monitoring, and most recordkeeping and reporting requirements are met after the SSI unit begins operation.

PRECONSTRUCTION SITING ANALYSIS

§ 60.4800 Who must prepare a siting analysis?

(a) You must prepare a siting analysis if you plan to commence construction of a SSI unit after October 14, 2010.

(b) You must prepare a siting analysis if you are required to submit an initial application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, as applicable, for the modification of your SSI unit.

§ 60.4805 What is a siting analysis?

(a) The siting analysis must consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment, including impacts of the affected SSI unit on ambient air quality, visibility, soils, and vegetation. In considering such alternatives, the analysis may consider costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of your SSI unit's impacts that are prepared to comply with state, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, provided they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) You must complete and submit the siting requirements of this section as required under § 60.4915(a)(3) prior to commencing construction.

OPERATOR TRAINING AND QUALIFICATION

§ 60.4810 What are the operator training and qualification requirements?

(a) A SSI unit cannot be operated unless a fully trained and qualified SSI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified SSI unit operator may operate the

SSI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified SSI unit operators are temporarily not accessible, you must follow the procedures in § 60.4835.

(b) Operator training and qualification must be obtained through a state-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (c)(3) of this section.

(1) Training on the 10 subjects listed in paragraphs (c)(1)(i) through (c)(1)(x) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, sewage sludge feeding, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to prevent malfunctions or to prevent conditions that may lead to malfunctions.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(2) An examination designed and administered by the state-approved program.

(3) Written material covering the training course topics that may serve as reference material following completion of the course.

§ 60.4815 When must the operator training course be completed?

The operator training course must be completed by the later of the two dates specified in paragraphs (a) and (b) of this section.

(a) Six months after your SSI unit startup.

(b) The date before an employee assumes responsibility for operating the SSI unit or assumes responsibility for supervising the operation of the SSI unit.

§ 60.4820 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.4810(b).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.4810(c)(2).

§ 60.4825 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, sewage sludge feeding, and ash handling.

(c) Inspection and maintenance.

(d) Prevention of malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

§ 60.4830 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification before you begin operation of a SSI unit by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.4825.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.4820(a).

§ 60.4835 What if all the qualified operators are temporarily not accessible?

If a qualified operator is not at the facility and cannot be at the facility

within 1 hour, you must meet the criteria specified in either paragraph (a) or (b) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When a qualified operator is not accessible for more than 8 hours, the SSI unit may be operated for less than 2 weeks by other plant personnel who are familiar with the operation of the SSI unit and who have completed a review of the information specified in § 60.4840 within the past 12 months. However, you must record the period when a qualified operator was not accessible and include this deviation in the annual report as specified under § 60.4915(d).

(b) When a qualified operator is not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (b)(1) and (b)(2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to the Administrator every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible, and requesting approval from the Administrator to continue operation of the SSI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (b)(1) of this section.

(i) If the Administrator notifies you that your request to continue operation of the SSI unit is disapproved, the SSI unit may continue operation for 30 days, and then must cease operation.

(ii) Operation of the unit may resume if a qualified operator is accessible as required under § 60.4810(a). You must notify the Administrator within 5 days of having resumed operations and of having a qualified operator accessible.

§ 60.4840 What site-specific documentation is required and how often must it be reviewed by qualified operators and plant personnel?

(a) You must maintain at the facility the documentation of the operator training procedures specified under § 60.4910(c)(1) and make the documentation readily accessible to all SSI unit operators.

(b) You must establish a program for reviewing the information listed in § 60.4910(c)(1) with each qualified incinerator operator and other plant personnel who may operate the unit according to the provisions of § 60.4835(a), according to the following schedule:

(1) The initial review of the information listed in § 60.4910(c)(1) must be conducted within 6 months after the effective date of this subpart or prior to an employee's assumption of responsibilities for operation of the SSI unit, whichever date is later.

(2) Subsequent annual reviews of the information listed in § 60.4910(c)(1) must be conducted no later than 12 months following the previous review.

EMISSION LIMITS, EMISSION STANDARDS, AND OPERATING LIMITS AND REQUIREMENTS

§ 60.4845 What emission limits and standards must I meet and by when?

You must meet the emission limits and standards specified in Table 1 or 2 to this subpart within 60 days after your SSI unit reaches the feed rate at which it will operate or within 180 days after its initial startup, whichever comes first. The emission limits and standards apply at all times the unit is operating, and during periods of malfunction. The emission limits and standards apply to emissions from a bypass stack or vent while sewage sludge is in the combustion chamber (*i.e.*, until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).

§ 60.4850 What operating limits and requirements must I meet and by when?

You must meet, as applicable, the operating limits and requirements specified in paragraphs (a) through (d) and

(h) of this section, according to the schedule specified in paragraph (e) of this section. The operating parameters for which you will establish operating limits for a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection are listed in Table 3 to this subpart. You must comply with the operating requirements in paragraph (f) of this section and the requirements in paragraph (g) of this section for meeting any new operating limits, re-established in § 60.4890. The operating limits apply at all times that sewage sludge is in the combustion chamber (*i.e.*, until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).

(a) You must meet a site-specific operating limit for minimum operating temperature of the combustion chamber (or afterburner combustion chamber) that you establish in § 60.4890(a)(2)(i).

(b) If you use a wet scrubber, electrostatic precipitator, or activated carbon injection to comply with an emission limit, you must meet the site-specific operating limits that you establish in § 60.4870 for each operating parameter associated with each air pollution control device.

(c) If you use a fabric filter to comply with the emission limits, you must install the bag leak detection system specified in §§ 60.4880(b) and 60.4905(b)(3)(i) and operate the bag leak detection system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. You must calculate the alarm time as specified in § 60.4870.

(d) You must meet the operating requirements in your site-specific fugitive emission monitoring plan, submitted as specified in § 60.4880(d) to ensure that your ash handling system will meet the emission standard for fugitive emissions from ash handling.

(e) You must meet the operating limits and requirements specified in paragraphs (a) through (d) of this section 60 days after your SSI unit reaches the feed rate at which it will operate, or within 180 days after its initial startup, whichever comes first.

(f) You must monitor the feed rate and moisture content of the sewage sludge fed to the sewage sludge incinerator, as specified in paragraphs (f)(1) and (f)(2) of this section.

(1) Continuously monitor the sewage sludge feed rate and calculate a daily average for all hours of operation during each 24-hour period. Keep a record of the daily average feed rate, as specified in § 60.4910(f)(3)(ii).

(2) Take at least one grab sample per day of the sewage sludge fed to the sewage sludge incinerator. If you take more than one grab sample in a day, calculate the daily average for the grab samples. Keep a record of the daily average moisture content, as specified in § 60.4910(f)(3)(ii).

(g) For the operating limits and requirements specified in paragraphs (a) through (d) and (h) of this section, you must meet any new operating limits and requirements, re-established according to § 60.4890(d).

(h) If you use an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection to comply with the emission limits in Table 1 or 2 to this subpart, you must meet any site-specific operating limits or requirements that you establish as required in § 60.4855.

§ 60.4855 How do I establish operating limits if I do not use a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection, or if I limit emissions in some other manner, to comply with the emission limits?

If you use an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection, or limit emissions in some other manner (*e.g.*, materials balance) to comply with the emission limits in § 60.4845, you must meet the requirements in paragraphs (a) and (b) of this section.

(a) Meet the applicable operating limits and requirements in § 60.4850, and establish applicable operating limits according to § 60.4870.

(b) Petition the Administrator for specific operating parameters, operating limits, and averaging periods to

be established during the initial performance test and to be monitored continuously thereafter.

(1) You are responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. You must not conduct the initial performance test until after the petition has been approved by the Administrator, and you must comply with the operating limits as written, pending approval by the Administrator. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves you of the responsibility to comply with any provision of this subpart.

(2) Your petition must include the five items listed in paragraphs (b)(2)(i) through (b)(2)(v) of this section.

(i) Identification of the specific parameters you propose to monitor.

(ii) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants.

(iii) A discussion of how you will establish the upper and/or lower values for these parameters that will establish the operating limits on these parameters, including a discussion of the averaging periods associated with those parameters for determining compliance.

(iv) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

§ 60.4860 Do the emission limits, emission standards, and operating limits apply during periods of startup, shutdown, and malfunction?

The emission limits and standards apply at all times and during periods of malfunction. The operating limits apply at all times that sewage sludge is in the combustion chamber (*i.e.*, until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).

§ 60.4861 How do I establish an affirmative defense for exceedance of an emission limit or standard during malfunction?

In response to an action to enforce the numerical emission standards set forth in paragraph § 60.4845, you may assert an affirmative defense to a claim for civil penalties for exceedances of emission limits that are caused by malfunction, as defined in § 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that the conditions in paragraphs (a)(1) through (a)(9) of this section are met.

(1) The excess emissions meet:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner, and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices, and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for, and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance, and (2) Repairs were made as expeditiously as possible when the applicable emission limits were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs, and

(3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the

maximum extent practicable during periods of such emissions, and

(4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health, and

(6) All emissions monitoring and control systems were kept in operation if at all possible consistent with safety and good air pollution control practices, and

(7) All of the actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs, and

(8) At all times, the affected facility was operated in a manner consistent with good practices for minimizing emissions, and

(9) A written root cause analysis has been prepared the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) The owner or operator of the SSI unit experiencing an exceedance of its emission limit(s) during a malfunction, shall notify the Administrator by telephone or facsimile (fax) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 60.4845 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

INITIAL COMPLIANCE REQUIREMENTS

§ 60.4865 How and when do I demonstrate initial compliance with the emission limits and standards?

To demonstrate initial compliance with the emission limits and standards in Table 1 or 2 to this subpart, use the procedures specified in paragraph (a) of this section for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, lead, and fugitive emissions from ash handling, and follow the procedures specified in paragraph (b) of this section for carbon monoxide. In lieu of using the procedures specified in paragraph (a) of this section, you also have the option to demonstrate initial compliance using the procedures specified in paragraph (b) of this section for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead. You must meet the requirements of paragraphs (a) or (b) of this section, as applicable, and paragraphs (c) and (d) of this section, according to the performance testing, monitoring, and calibration requirements in § 60.4900(a) and (b). Except as provided in paragraph (e) of this section, within 60 days after your SSI unit reaches the feed rate at which it will operate, or within 180 days after its initial startup, whichever comes first, you must demonstrate that your SSI unit meets the emission limits and standards specified in Table 1 or 2 to this subpart.

(a) Demonstrate initial compliance using the performance test required in § 60.8. You must demonstrate that your SSI unit meets the emission limits and standards specified in Table 1 or 2 to this subpart for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, lead, and fugitive emissions from ash handling using the performance test. The initial performance

test must be conducted using the test methods, averaging methods, and minimum sampling volumes or durations specified in Table 1 or 2 to this subpart and according to the testing, monitoring, and calibration requirements specified in § 60.4900(a).

(b) Demonstrate initial compliance using a continuous emissions monitoring system or continuous automated sampling system. The option to use a continuous emissions monitoring system for hydrogen chloride, dioxins/furans, cadmium, or lead takes effect on the date a final performance specification applicable to hydrogen chloride, dioxins/furans, cadmium, or lead is published in the FEDERAL REGISTER. The option to use a continuous automated sampling system for dioxins/furans takes effect on the date a final performance specification for such a continuous automated sampling system is published in the FEDERAL REGISTER. Collect data as specified in § 60.4900(b)(6) and use the following procedures:

(1) To demonstrate initial compliance with the carbon monoxide emission limit specified in Table 1 or 2 to this subpart, you must use the carbon monoxide continuous emissions monitoring system specified in § 60.4900(b). For determining compliance with the carbon monoxide concentration limit using carbon monoxide CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured carbon monoxide concentration without correcting for oxygen concentration in averaging with other carbon monoxide concentrations (corrected to 7 percent oxygen) to determine the 24-hour average value.

(2) To demonstrate initial compliance with the emission limits specified in Table 1 or 2 to this subpart for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead, you may substitute the use of a continuous monitoring system in lieu of conducting the initial performance test required in paragraph (a) of this section, as follows:

(i) You may substitute the use of a continuous emissions monitoring system for any pollutant specified in paragraph (b)(2) of this section in lieu of conducting the initial performance test for that pollutant in paragraph (a) of this section.

(ii) You may substitute the use of a continuous automated sampling system for mercury or dioxins/furans in lieu of conducting the initial mercury or dioxin/furan performance test in paragraph (a) of this section.

(3) If you use a continuous emissions monitoring system to demonstrate compliance with an applicable emission limit in Table 1 or 2 to this subpart, as described in paragraph (b)(1) or (b)(2) of this section, you must use the continuous emissions monitoring system and follow the requirements specified in § 60.4900(b). You must measure emissions according to § 60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen (or carbon dioxide). You must demonstrate initial compliance using a 24-hour block average of these 1-hour arithmetic average emission concentrations, calculated using Equation 19–19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A–7.

(4) If you use a continuous automated sampling system to demonstrate compliance with an applicable emission limit in Table 1 or 2 to this subpart, as described in paragraph (b)(2) of this section, you must:

(i) Use the continuous automated sampling system specified in § 60.58b(p) and (q), and measure and calculate average emissions corrected to 7 percent oxygen (or carbon dioxide) according to § 60.58b(p) and your monitoring plan.

(A) Use the procedures specified in § 60.58b(p) to calculate 24-hour block averages to determine compliance with the mercury emission limit in Table 1 or 2 to this subpart.

(B) Use the procedures specified in § 60.58b(p) to calculate 2-week block averages to determine compliance with the dioxin/furan (total mass basis or toxic equivalency basis) emission limits in Table 1 or 2 to this subpart.

(ii) Comply with the provisions in § 60.58b(q) to develop a monitoring plan. For mercury continuous automated sampling systems, you must use Performance Specification 12B of appendix B of part 75 and Procedure 5 of appendix F of this part.

(5) Except as provided in paragraph (e) of this section, you must complete your initial performance evaluations required under your monitoring plan for any continuous emissions monitoring system and continuous automated sampling systems according to the provisions of § 60.4880. Your performance evaluation must be conducted using the procedures and acceptance criteria specified in § 60.4880(a)(3).

(c) To demonstrate initial compliance with the dioxins/furans toxic equivalency emission limit in Table 1 or 2 to this subpart, determine dioxins/furans toxic equivalency as follows:

(1) Measure the concentration of each dioxin/furan tetra- through octachlorinated-isomer emitted using Method 23 at 40 CFR part 60, appendix A–7.

(2) Multiply the concentration of each dioxin/furan (tetra- through octachlorinated) isomer by its corresponding toxic equivalency factor specified in Table 4 to this subpart.

(3) Sum the products calculated in accordance with paragraph (c)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(d) Submit an initial compliance report, as specified in § 60.4915(c).

(e) If you demonstrate initial compliance using the performance test specified in paragraph (a) of this section, then the provisions of this paragraph (e) apply. If a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure, you must notify the Administrator in writing as specified in § 60.4915(g). You must conduct the initial performance test as soon as practicable after the force majeure occurs. The Administrator will determine whether or not to grant the extension to the initial performance test deadline, and will notify you in writing of approval or disapproval of the request for an extension as soon as practicable. Until an extension of the performance test deadline has been approved by the Administrator, you remain strictly subject to the requirements of this subpart.

§ 60.4870 How do I establish my operating limits?

(a) You must establish the site-specific operating limits specified in paragraphs (b) through (h) of this section or established in § 60.4855, as applicable, during your initial performance tests required in § 60.4865. You must meet the requirements in § 60.4890(d) to confirm these operating limits or re-establish new operating limits using operating data recorded during any performance tests or performance evaluations required in § 60.4885. You must follow the data measurement and recording frequencies and data averaging times specified in Table 3 to this subpart or as established in § 60.4855, and you must follow the testing, monitoring, and calibration requirements specified in §§ 60.4900 and 60.4905 or established in § 60.4855. You are not required to establish operating limits for the operating parameters listed in Table 3 to this subpart for a control device if you use a continuous monitoring system to demonstrate compliance with the emission limits in Table 1 or 2 to this subpart for the applicable pollutants, as follows:

(1) For a scrubber designed to control emissions of hydrogen chloride or sulfur dioxide, you are not required to establish an operating limit and monitor, scrubber liquid flow rate or scrubber liquid pH if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for hydrogen chloride or sulfur dioxide.

(2) For a scrubber designed to control emissions of particulate matter, cadmium, and lead, you are not required to establish an operating limit and monitor pressure drop across the scrubber or scrubber liquid flow rate if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for particulate matter, cadmium, and lead.

(3) For an electrostatic precipitator designed to control emissions of particulate matter, cadmium, and lead, you are not required to establish an operating limit and monitor secondary voltage of the collection plates, secondary amperage of the collection

plates, or effluent water flow rate at the outlet of the electrostatic precipitator if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for particulate matter, cadmium, and lead.

(4) For an activated carbon injection system designed to control emissions of mercury, you are not required to establish an operating limit and monitor sorbent injection rate and carrier gas flow rate (or carrier gas pressure drop) if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for mercury.

(5) For an activated carbon injection system designed to control emissions of dioxins/furans, you are not required to establish an operating limit and monitor sorbent injection rate and carrier gas flow rate (or carrier gas pressure drop) if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for dioxins/furans (total mass basis or toxic equivalency basis).

(b) Minimum pressure drop across each wet scrubber used to meet the particulate matter, lead, and cadmium emission limits in Table 1 or 2 to this subpart, equal to the lowest 4-hour average pressure drop across each such wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter, lead, and cadmium emission limits.

(c) Minimum scrubber liquid flow rate (measured at the inlet to each wet scrubber), equal to the lowest 4-hour average liquid flow rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(d) Minimum scrubber liquid pH for each wet scrubber used to meet the sulfur dioxide or hydrogen chloride emission limits in Table 1 or 2 to this subpart, equal to the lowest 1-hour average scrubber liquid pH measured during the most recent performance test demonstrating compliance with the sulfur dioxide and hydrogen chloride emission limits.

(e) Minimum combustion chamber operating temperature (or minimum afterburner temperature), equal to the lowest 4-hour average combustion chamber operating temperature (or afterburner temperature) measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(f) Minimum power input to the electrostatic precipitator collection plates, equal to the lowest 4-hour average power measured during the most recent performance test demonstrating compliance with the particulate matter, lead, and cadmium emission limits. Power input must be calculated as the product of the secondary voltage and secondary amperage to the electrostatic precipitator collection plates. Both the secondary voltage and secondary amperage must be recorded during the performance test.

(g) Minimum effluent water flow rate at the outlet of the electrostatic precipitator, equal to the lowest 4-hour average effluent water flow rate at the outlet of the electrostatic precipitator measured during the most recent performance test demonstrating compliance with the particulate matter, lead, and cadmium emission limits.

(h) For activated carbon injection, establish the site-specific operating limits specified in paragraphs (h)(1) through (h)(3) of this section.

(1) Minimum mercury sorbent injection rate, equal to the lowest 4-hour average mercury sorbent injection rate measured during the most recent performance test demonstrating compliance with the mercury emission limit.

(2) Minimum dioxin/furan sorbent injection rate, equal to the lowest 4-hour average dioxin/furan sorbent injection rate measured during the most recent performance test demonstrating compliance with the dioxin/furan (total mass basis or toxic equivalency basis) emission limit.

(3) Minimum carrier gas flow rate or minimum carrier gas pressure drop, as follows:

(i) Minimum carrier gas flow rate, equal to the lowest 4-hour average carrier gas flow rate measured during the most recent performance test demonstrating compliance with the applicable emission limit.

(ii) Minimum carrier gas pressure drop, equal to the lowest 4-hour average carrier gas flow rate measured during the most recent performance test demonstrating compliance with the applicable emission limit.

§ 60.4875 By what date must I conduct the initial air pollution control device inspection and make any necessary repairs?

(a) You must conduct an air pollution control device inspection according to § 60.4900(c) within 60 days of installing an air pollution control device or within 180 days of startup of the SSI unit using the air pollution control device, whichever comes first.

(b) Within 10 operating days following the air pollution control device inspection under paragraph (a) of this section, all necessary repairs must be completed unless you obtain written approval from the Administrator establishing a date whereby all necessary repairs of the SSI unit must be completed.

§ 60.4880 How do I develop a site-specific monitoring plan for my continuous monitoring, bag leak detection, and ash handling systems, and by what date must I conduct an initial performance evaluation?

You must develop and submit to the Administrator for approval a site-specific monitoring plan for each continuous monitoring system required under this subpart, according to the requirements in paragraphs (a) through (d) of this section. This requirement also applies to you if you petition the Administrator for alternative monitoring parameters under § 60.13(i) and paragraph (e) of this section. If you use a continuous automated sampling system to comply with the mercury or dioxin/furan (total mass basis or toxic equivalency basis) emission limit, you must develop your monitoring plan as specified in § 60.58b(q), and you are not required to meet the requirements in paragraphs (a) and (b) of this section. You must also submit a site-specific monitoring plan for your ash handling system, as specified in paragraph (d) of this section. You must submit and update your monitoring plans as specified in paragraphs (f) through (h) of this section.

(a) For each continuous monitoring system, your monitoring plan must address the elements and requirements specified in paragraphs (a)(1) through (a)(8) of this section. You must operate and maintain the continuous monitoring system in continuous operation according to the site-specific monitoring plan.

(1) Installation of the continuous monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer and the data collection and reduction systems.

(3) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations).

(i) For continuous emissions monitoring systems, your performance evaluation and acceptance criteria must include, but is not limited to, the following:

(A) The applicable requirements for continuous emissions monitoring systems specified in § 60.13.

(B) The applicable performance specifications (*e.g.*, relative accuracy tests) in appendix B of this part.

(C) The applicable procedures (*e.g.*, quarterly accuracy determinations and daily calibration drift tests) in appendix F of this part.

(D) A discussion of how the occurrence and duration of out-of-control periods will affect the suitability of CEMS data, where out-of-control has the meaning given in section (a)(7)(i) of this section.

(ii) For continuous parameter monitoring systems, your performance evaluation and acceptance criteria must include, but is not limited to the following:

(A) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (a)(3)(ii)(A)(*1*) through (*4*) of this section.

(*1*) Install the flow sensor and other necessary equipment in a position that provides a representative flow.

(*2*) Use a flow sensor with a measurement sensitivity of no greater than 2 percent of the expected process flow rate.

(*3*) Minimize the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(*4*) Conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(B) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (a)(3)(ii)(B)(*1*) through (*6*) of this section.

(*1*) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (*e.g.*, particulate matter scrubber pressure drop).

(*2*) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(*3*) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.

(*4*) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (*e.g.*, check for pressure tap pluggage daily).

(*5*) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(*6*) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in your monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.

(C) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (a)(3)(ii)(C)(*1*) through (*4*) of this section.

(*1*) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.

(*2*) Ensure the sample is properly mixed and representative of the fluid to be measured.

(*3*) Conduct a performance evaluation of the pH monitoring system in accordance with your monitoring plan at least once each process operating day.

(*4*) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the pH of the operating limit) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than quarterly.

(D) If you have an operating limit that requires the use of a temperature measurement device, you must meet the requirements in paragraphs (a)(3)(ii)(D)(*1*) through (*4*) of this section.

(*1*) Install the temperature sensor and other necessary equipment in a position that provides a representative temperature.

(*2*) Use a temperature sensor with a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit), or 1.0 percent of the temperature value, whichever is larger, for a noncryogenic temperature range.

(*3*) Use a temperature sensor with a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit), or 2.5 percent of the temperature value, whichever is larger, for a cryogenic temperature range.

(*4*) Conduct a temperature measurement device performance evaluation at the time of each performance test but no less frequently than annually.

(E) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator, you must meet the requirements in paragraphs (a)(3)(ii)(E)(*1*) and (*2*) of this section.

(*1*) Install sensors to measure (secondary) voltage and current to the electrostatic precipitator collection plates.

(*2*) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(F) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (*e.g.*, weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (a)(3)(ii)(F)(*1*) and (*2*) of this section.

(*1*) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.

(*2*) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(4) Ongoing operation and maintenance procedures in accordance with the general requirements of § 60.11(d).

(5) Ongoing data quality assurance procedures in accordance with the general requirements of § 60.13.

(6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 60.7(b), (c), (c)(1), (c)(4), (d), (e), (f) and (g).

(7) Provisions for periods when the continuous monitoring system is out of control, as follows:

(i) A continuous monitoring system is out of control if the conditions of paragraph (a)(7)(i)(A) or (a)(7)(i)(B) of this section are met.

(A) The zero (low-level), mid-level (if applicable), or high-level calibration drift exceeds two times the applicable calibration drift specification in the applicable performance specification or in the relevant standard.

(B) The continuous monitoring system fails a performance test audit (*e.g.*, cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit.

(ii) When the continuous monitoring system is out of control as specified in paragraph (a)(7)(i) of this section, you must take the necessary corrective action and must repeat all necessary tests that indicate that the system is out of control. You must 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 you conduct 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.

(8) Schedule for conducting initial and periodic performance evaluations.

(b) If a bag leak detection system is used, your monitoring plan must include a description of the following items:

(1) Installation of the bag leak detection system in accordance with paragraphs (b)(1)(i) and (ii) of this section.

(i) Install the bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (*e.g.*, for a positive pressure fabric filter) of the fabric filter.

(ii) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(2) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established. Use a bag leak detection system equipped with a system that will sound an alarm when the system detects an increase in relative particulate matter emissions over a preset level. The alarm must be located where it is observed readily and any alert is detected and recognized easily by plant operating personnel.

(3) Evaluations of the performance of the bag leak detection system, performed in accordance with your monitoring plan and consistent with the guidance provided in Fabric Filter Bag Leak Detection Guidance, EPA–454/R–98–015, September 1997 (incorporated by reference, see § 60.17).

(4) Operation of the bag leak detection system, including quality assurance procedures.

(5) Maintenance of the bag leak detection system, including a routine

maintenance schedule and spare parts inventory list.

(6) Recordkeeping (including record retention) of the bag leak detection system data. Use a bag leak detection system equipped with a device to continuously record the output signal from the sensor.

(c) You must conduct an initial performance evaluation of each continuous monitoring system and bag leak detection system, as applicable, in accordance with your monitoring plan and § 60.13(c). For the purposes of this subpart, the provisions of § 60.13(c) also apply to the bag leak detection system. You must conduct the initial performance evaluation of each continuous monitoring system within 60 days of installation of the monitoring system.

(d) You must submit a monitoring plan specifying the ash handling system operating procedures that you will follow to ensure that you meet the fugitive emissions limit specified in Table 1 or 2 to this subpart.

(e) You may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the standards of this subpart, subject to the provisions of paragraphs (e)(1) through (e)(6) of this section.

(1) The Administrator will not approve averaging periods other than those specified in this section, unless you document, using data or information, that the longer averaging period will ensure that emissions do not exceed levels achieved over the duration of three performance test runs.

(2) If the application to use an alternate monitoring requirement is approved, you must continue to use the original monitoring requirement until approval is received to use another monitoring requirement.

(3) You must submit the application for approval of alternate monitoring requirements no later than the notification of performance test. The application must contain the information specified in paragraphs (e)(3)(i) through (e)(3)(iii) of this section:

(i) Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach.

(ii) A description of the proposed alternative monitoring requirement, including the operating parameter to be monitored, the monitoring approach and technique, the averaging period for the limit, and how the limit is to be calculated.

(iii) Data or information documenting that the alternative monitoring requirement would provide equivalent or better assurance of compliance with the relevant emission standard.

(4) The Administrator will notify you of the approval or denial of the application within 90 calendar days after receipt of the original request, or within 60 calendar days of the receipt of any supplementary information, whichever is later. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard. Before disapproving any alternate monitoring application, the Administrator will provide the following:

(i) Notice of the information and findings upon which the intended disapproval is based.

(ii) Notice of opportunity for you to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for you to provide additional supporting information.

(5) You are responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves you of the responsibility to comply with any provision of this subpart.

(6) The Administrator may decide at any time, on a case-by-case basis, that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of this subpart.

(f) You must submit your monitoring plans required in paragraphs (a) and (b) of this section at least 60 days before your initial performance evaluation of your continuous monitoring system(s).

(g) You must submit your monitoring plan for your ash handling system, as required in paragraph (d) of this section, at least 60 days before your initial compliance test date.

(h) You must update and resubmit your monitoring plan if there are any changes or potential changes in your monitoring procedures or if there is a process change, as defined in § 60.4930.

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.4885 How and when do I demonstrate continuous compliance with the emission limits and standards?

To demonstrate continuous compliance with the emission limits and standards specified in Table 1 or 2 to this subpart, use the procedures specified in paragraph (a) of this section for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, lead, and fugitive emissions from ash handling, and follow the procedures specified in paragraph (b) of this section for carbon monoxide. In lieu of using the procedures specified in paragraph (a) of this section, you also have the option to demonstrate continuous compliance using the procedures specified in paragraph (b) of this section for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead. You must meet the requirements of paragraphs (a) and (b) of this section, as applicable, and paragraphs (c) through (e) of this section, according to the performance testing, monitoring, and calibration requirements in § 60.4900(a) and (b). You may also petition the Administrator for alternative monitoring parameters as specified in paragraph (f) of this section.

(a) Demonstrate continuous compliance using a performance test. Except as provided in paragraphs (a)(3) and (e) of this section, following the date that the initial performance test for each pollutant in Table 1 or 2 to this subpart except carbon monoxide is completed, you must conduct a performance test for each such pollutant on an annual basis (between 11 and 13 calendar months following the previous performance test). The performance test must be conducted using the test methods, averaging methods, and minimum sampling volumes or durations specified in Table 1 or 2 to this subpart and according to the testing, monitoring, and calibration requirements specified in § 60.4900(a).

(1) You may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward. The Administrator may request a repeat performance test at any time.

(2) You must repeat the performance test within 60 days of a process change, as defined in § 60.4930.

(3) Except as specified in paragraphs (a)(1) and (2) of this section, you can conduct performance tests less often for a given pollutant, as specified in paragraphs (a)(3)(i) through (iii) of this section.

(i) You can conduct performance tests less often if your performance tests for the pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit specified in Table 2 or 3 to this subpart, and there are no changes in the operation of the affected source or air pollution control equipment that could increase emissions. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the third year and no more than 37 months after the previous performance test.

(ii) If your SSI unit continues to meet the emission limit for the pollutant, you may choose to conduct performance tests for the pollutant every third year if your emissions are at or below 75 percent of the emission limit, and if there are no changes in the operation of the affected source or air pollution control equipment that could increase emissions, but each such performance test must be conducted no more than 37 months after the previous performance test.

(iii) If a performance test shows emissions exceeded 75 percent of the emission limit for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over 2 consecutive years show compliance.

(b) Demonstrate continuous compliance using a continuous emissions monitoring system or continuous automated sampling system. The option to use a continuous emissions monitoring system for hydrogen chloride, dioxins/furans, cadmium, or lead takes effect on the date a final performance specification applicable to hydrogen chloride, dioxins/furans, cadmium, or lead is published in the FEDERAL REGISTER. The option to use a continuous automated sampling system for dioxins/furans takes effect on the date a final performance specification for such a continuous automated sampling system is published in the FEDERAL REGISTER. Collect data as specified in § 60.4900(b)(6) and use the following procedures:

(1) To demonstrate continuous compliance with the carbon monoxide emission limit, you must use the carbon monoxide continuous emissions monitoring system specified in § 60.4900(b). For determining compliance with the carbon monoxide concentration limit using carbon monoxide CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured carbon monoxide concentration without correcting for oxygen concentration in averaging with other carbon monoxide concentrations (corrected to 7 percent oxygen) to determine the 24-hour average value.

(2) To demonstrate continuous compliance with the emission limits for particulate matter, hydrogen chloride, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead, you may substitute the use of a continuous monitoring system in lieu of conducting the annual performance test required in paragraph (a) of this section, as follows:

(i) You may substitute the use of a continuous emissions monitoring system for any pollutant specified in paragraph (b)(2) of this section in lieu of conducting the annual performance test for that pollutant in paragraph (a) of this section.

(ii) You may substitute the use of a continuous automated sampling system for mercury or dioxins/furans in lieu of conducting the annual mercury or dioxin/furan performance test in paragraph (a) of this section.

(3) If you use a continuous emissions monitoring system to demonstrate compliance with an applicable emission limit in either paragraph (b)(1) or (b)(2) of this section, you must use the continuous emissions monitoring system and follow the requirements specified in § 60.4900(b). You must measure emissions according to § 60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen (or carbon dioxide). You must demonstrate initial compliance using a 24-hour block average of these 1-hour arithmetic average emission concentrations, calculated using Equation 19–19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A–7.

(4) If you use a continuous automated sampling system to demonstrate compliance with an applicable emission limit in paragraph (b)(2) of this section, you must:

(i) Use the continuous automated sampling system specified in § 60.58b(p) and (q), and measure and calculate average emissions corrected to 7 percent oxygen (or carbon dioxide) according to § 60.58b(p) and your monitoring plan.

(A) Use the procedures specified in § 60.58b(p) to calculate 24-hour averages to determine compliance with the mercury emission limit in Table 1 or 2 to this subpart.

(B) Use the procedures specified in § 60.58b(p) to calculate 2-week averages to determine compliance with the dioxin/furan emission limit (total mass basis or toxic equivalency basis) in Table 1 or 2 to this subpart.

(ii) Update your monitoring plan as specified in § 60.4880(e). For mercury continuous automated sampling systems, you must use Performance Specification 12B of appendix B of part 75 and Procedure 5 of appendix F of this part.

(5) Except as provided in paragraph (e) of this section, you must complete your periodic performance evaluations required under your monitoring plan for any continuous emissions monitoring system and continuous automated sampling systems, according to the schedule specified in your monitoring plan. If you were previously determining compliance by conducting

an annual performance test (or according to the less frequent testing for a pollutant as provided in paragraph (a)(3) of this section), you must complete the initial performance evaluation required in your monitoring plan in § 60.4880 for the continuous monitoring system prior to using the continuous emissions monitoring system to demonstrate compliance or continuous automated sampling system. Your performance evaluation must be conducted using the procedures and acceptance criteria specified in § 60.4880(a)(3).

(c) To demonstrate compliance with the dioxins/furans toxic equivalency emission limit in paragraph (a) or (b) of this section, you must determine dioxins/furans toxic equivalency as follows:

(1) Measure the concentration of each dioxin/furan tetra- through octa-chlorinated isomer emitted using EPA Method 23.

(2) For each dioxin/furan (tetra- through octa-chlorinated) isomer measured in accordance with paragraph (c)(1) of this section, multiply the isomer concentration by its corresponding toxic equivalency factor specified in Table 4 to this subpart.

(3) Sum the products calculated in accordance with paragraph (c)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(d) You must submit the annual compliance report specified in § 60.4915(d). You must submit the deviation report specified in § 60.4915(e) for each instance that you did not meet each emission limit in Table 1 or 2 to this subpart.

(e) If you demonstrate continuous compliance using a performance test, as specified in paragraph (a) of this section, then the provisions of this paragraph (e) apply. If a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure, you must notify the Administrator in writing as specified in § 60.4915(g). You must conduct the performance test as soon as practicable after the force majeure occurs. The Administrator will determine whether or not to grant the extension to the performance test deadline, and will notify you in writing of approval or disapproval of the request for an extension as soon as practicable. Until an extension of the performance test deadline has been approved by the Administrator, you remain strictly subject to the requirements of this subpart.

(f) After any initial requests in § 60.4880 for alternative monitoring requirements for initial compliance, you may subsequently petition the Administrator for alternative monitoring parameters as specified in §§ 60.13(i) and 60.4880(e).

§ 60.4890 How do I demonstrate continuous compliance with my operating limits?

You must continuously monitor your operating parameters as specified in paragraph (a) of this section and meet the requirements of paragraphs (b) and (c) of this section, according to the monitoring and calibration requirements in § 60.4905. You must confirm and re-establish your operating limits as specified in paragraph (d) of this section.

(a) You must continuously monitor the operating parameters specified in paragraphs (a)(1) and (a)(2) of this section using the continuous monitoring equipment and according to the procedures specified in § 60.4905 or established in § 60.4855. To determine compliance, you must use the data averaging period specified in Table 3 to this subpart (except for alarm time of the baghouse leak detection system) unless a different averaging period is established under § 60.4855.

(1) You must demonstrate that the SSI unit meets the operating limits established according to §§ 60.4855 and 60.4870 and paragraph (d) of this section for each applicable operating parameter.

(2) You must demonstrate that the SSI unit meets the operating limit for bag leak detection systems as follows:

(i) For a bag leak detection system, you must calculate the alarm time as follows:

(A) If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted.

(B) If corrective action is required, each alarm time shall be counted as a minimum of 1 hour.

(C) If you take longer than 1 hour to initiate corrective action, each alarm time (*i.e.*, time that the alarm sounds) is counted as the actual amount of time taken by you to initiate corrective action.

(ii) Your maximum alarm time is equal to 5 percent of the operating time during a 6-month period, as specified in § 60.4850(c).

(b) Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. You must submit the deviation report specified in § 60.4915(e) for each instance that you did not meet one of your operating limits established under this subpart.

(c) You must submit the annual compliance report specified in § 60.4915(d) to demonstrate continuous compliance.

(d) You must confirm your operating limits according to paragraph (d)(1) of this section or re-establish operating limits according to paragraph (d)(2) of this section. Your operating limits must be established so as to assure ongoing compliance with the emission limits. These requirements also apply to your operating requirements in your fugitive emissions monitoring plan specified in § 60.4850(d).

(1) Your operating limits must be based on operating data recorded during any performance test required in § 60.4885(a) or any performance evaluation required in § 60.4885(b)(5).

(2) You may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward.

§ 60.4895 By what date must I conduct annual air pollution control device inspections and make any necessary repairs?

(a) You must conduct an annual inspection of each air pollution control device used to comply with the emission limits, according to § 60.4900(c), no later than 12 months following the previous annual air pollution control device inspection.

(b) Within 10 operating days following an air pollution control device inspection, all necessary repairs must be completed unless you obtain written approval from the Administrator establishing a date whereby all necessary repairs of the affected SSI unit must be completed.

PERFORMANCE TESTING, MONITORING, AND CALIBRATION REQUIREMENTS

§ 60.4900 What are the performance testing, monitoring, and calibration requirements for compliance with the emission limits and standards?

You must meet, as applicable, the performance testing requirements specified in paragraph (a) of this section, the monitoring requirements specified in paragraph (b) of this section, the air pollution control device inspections requirements specified in paragraph (c) of this section, and the bypass stack provisions specified in paragraph (d) of this section.

(a) *Performance testing requirements.*

(1) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations, as specified in § 60.8(c). Emissions in excess of the emission limits or standards during periods of startup, shutdown, and malfunction are considered deviations from the applicable emission limits or standards.

(2) You must document that the dry sludge burned during the performance test is representative of the sludge burned under normal operating conditions by:

(i) Maintaining a log of the quantity of sewage sludge burned during the performance test by continuously monitoring and recording the average hourly rate that sewage sludge is fed to the incinerator.

(ii) Maintaining a log of the moisture content of the sewage sludge burned during the performance test by taking grab samples of the sewage sludge fed to the incinerator for each 8 hour period that testing is conducted.

(3) All performance tests must be conducted using the test methods, minimum sampling volume, observation

period, and averaging methods specified in Table 1 or 2 to this subpart.

(4) Method 1 at 40 CFR part 60, appendix A–1 must be used to select the sampling location and number of traverse points.

(5) Method 3A or 3B at 40 CFR part 60, appendix A–2 must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B at 40 CFR part 60, appendix A–2 must be used simultaneously with each method.

(6) All pollutant concentrations must be adjusted to 7 percent oxygen using Equation 1 of this section:

$$C_{adj} = C_{meas}(20.9-7)/(20.9-\%O_2) \quad \text{(Eq. 1)}$$

Where:

C_{adj} = Pollutant concentration adjusted to 7 percent oxygen.

C_{meas} = Pollutant concentration measured on a dry basis.

(20.9–7) = 20.9 percent oxygen − 7 percent oxygen (defined oxygen correction basis).

20.9 = Oxygen concentration in air, percent.

$\%O_2$ = Oxygen concentration measured on a dry basis, percent.

(7) Performance tests must be conducted and data reduced in accordance with the test methods and procedures contained in this subpart unless the Administrator does one of the following.

(i) Specifies or approves, in specific cases, the use of a method with minor changes in methodology.

(ii) Approves the use of an equivalent method.

(iii) 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.

(iv) Waives the requirement for performance tests because you have demonstrated by other means to the Administrator's satisfaction that the affected SSI unit is in compliance with the standard.

(v) Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph is construed to abrogate the Administrator's authority to require testing under section 114 of the Clean Air Act.

(8) You must provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, *etc.*) in conducting the scheduled performance test, you must notify the Administrator as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator by mutual agreement.

(9) You must provide, or cause to be provided, performance testing facilities as follows:

(i) Sampling ports adequate for the test methods applicable to the SSI unit, as follows:

(A) 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.

(B) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.

(ii) Safe sampling platform(s).

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

(iv) Utilities for sampling and testing equipment.

(10) Unless otherwise specified in this subpart, each performance test must consist of three separate runs using the applicable test method. Each run must be conducted for the time and under the conditions specified in the applicable standard. Compliance with each emission limit must be determined by calculating the arithmetic mean of the three runs. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be

discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond your control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

(11) During each test run specified in paragraph (a)(1) of this section, you must operate your sewage sludge incinerator at a minimum of 85 percent of your maximum permitted capacity.

(b) *Continuous monitor requirements.* You must meet the following requirements, as applicable, when using a continuous monitoring system to demonstrate compliance with the emission limits in Table 1 or 2 to this subpart. The option to use a continuous emissions monitoring system for hydrogen chloride, dioxins/furans, cadmium, or lead takes effect on the date a final performance specification applicable to hydrogen chloride, dioxins/furans, cadmium, or lead is published in the FEDERAL REGISTER. If you elect to use a continuous emissions monitoring system instead of conducting annual performance testing, you must meet the requirements of paragraphs (b)(1) through (b)(6) of this section. If you elect to use a continuous automated sampling system instead of conducting annual performance testing, you must meet the requirements of paragraph (b)(7) of this section. The option to use a continuous automated sampling system for dioxins/furans takes effect on the date a final performance specification for such a continuous automated sampling system is published in the FEDERAL REGISTER.

(1) You must notify the Administrator one month before starting use of the continuous monitoring system.

(2) You must notify the Administrator one month before stopping use of the continuous monitoring system, in which case you must also conduct a performance test prior to ceasing operation of the system.

(3) You must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the emissions to the atmosphere in accordance with the following:

(i) Section 60.13 of subpart A of this part.

(ii) The following performance specifications of appendix B of this part, as applicable:

(A) For particulate matter, Performance Specification 11 of appendix B of this part.

(B) For hydrogen chloride, Performance Specification 15 of appendix B of this part.

(C) For carbon monoxide, Performance Specification 4B of appendix B of this part with the modifications shown in Tables 1 and 2 to this subpart.

(D) [Reserved]

(E) For mercury, Performance Specification 12A of appendix B of this part.

(F) For nitrogen oxides, Performance Specification 2 of appendix B of this part.

(G) For sulfur dioxide, Performance Specification 2 of appendix B of this part.

(iii) For continuous emissions monitoring systems, the quality assurance procedures (*e.g.*, quarterly accuracy determinations and daily calibration drift tests) of appendix F of this part specified in paragraphs (b)(3)(iii)(A) through (b)(3)(iii)(G) of this section. For each pollutant, the span value of the continuous emissions monitoring system is two times the applicable emission limit, expressed as a concentration.

(A) For particulate matter, Procedure 2 in appendix F of this part.

(B) For hydrogen chloride, Procedure 1 in appendix F of this part except that the Relative Accuracy Test Audit requirements of Procedure 1 shall be replaced with the validation requirements and criteria of sections 11.1.1 and 12.0 of Performance Specification 15 of appendix B of this part.

(C) For carbon monoxide, Procedure 1 in appendix F of this part.

(D) [Reserved]

(E) For mercury, Procedures 5 in appendix F of this part.

(F) For nitrogen oxides, Procedure 1 in appendix F of this part.

(G) For sulfur dioxide, Procedure 1 in appendix F of this part.

(iv) If your monitoring system has a malfunction or out-of-control period, you must complete repairs and resume

operation of your monitoring system as expeditiously as possible.

(4) During each relative accuracy test run of the continuous emissions monitoring system using the performance specifications in paragraph (b)(3)(ii) of this section, emission data for each regulated pollutant and oxygen (or carbon dioxide as established in paragraph (b)(5) of this section) must be collected concurrently (or within a 30- to 60-minute period) by both the continuous emissions monitoring systems and the test methods specified in paragraphs (b)(4)(i) through (b)(4)(viii) of this section. Relative accuracy testing must be at representative operating conditions while the SSI unit is charging sewage sludge.

(i) For particulate matter, Method 5 at 40 CFR part 60, appendix A–3 or Method 26A or 29 at 40 CFR part 60, appendix A–8 shall be used.

(ii) For hydrogen chloride, Method 26 or 26A at 40 CFR part 60, appendix A–8, shall be used as specified in Tables 2 and 3 to this subpart.

(iii) For carbon monoxide, Method 10, 10A, or 10B at 40 CFR part 60, appendix A–4, shall be used.

(iv) For dioxins/furans, Method 23 at 40 CFR part 60, appendix A–7, shall be used.

(v) For mercury, cadmium, and lead, Method 29 at 40 CFR part 60, appendix A–8 shall be used. Alternatively for mercury, Method 30B at 40 CFR part 60, appendix A–8 or ASTM D6784–02 (Reapproved 2008) (incorporated by reference, see § 60.17), may be used.

(vi) For nitrogen oxides, Method 7 or 7E at 40 CFR part 60, appendix A–4, shall be used.

(vii) For sulfur dioxide, Method 6 or 6C at 40 CFR part 60, appendix A–4, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17) must be used. For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for inlet sulfur dioxide continuous emissions monitoring system should be no greater than 20 percent of the mean value of the method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference between the method and the continuous emissions monitoring system, whichever is greater.

(viii) For oxygen (or carbon dioxide as established in (b)(5) of this section), Method 3A or 3B at 40 CFR part 60, appendix A–2, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17), as applicable, must be used.

(5) You may request that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels must be established during the initial performance test according to the procedures and methods specified in paragraphs (b)(5)(i) through (b)(5)(iv) of this section. This relationship may be re-established during subsequent performance tests.

(i) The fuel factor equation in Method 3B at 40 CFR part 60, appendix A–2 must be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Method 3A or 3B at 50 CFR part 60, appendix A–2, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17), as applicable, must be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

(ii) Samples must be taken for at least 30 minutes in each hour.

(iii) Each sample must represent a 1-hour average.

(iv) A minimum of three runs must be performed.

(6) You must operate the continuous monitoring system and collect data with the continuous monitoring system as follows:

(i) You must collect data using the continuous monitoring system at all times the affected SSI unit is operating and at the intervals specified in paragraph (b)(6)(ii) of this section, except for periods of monitoring system malfunctions that occur during periods specified in § 60.4880(a)(7)(i), repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero

and span adjustments). Any such periods that you do not collect data using the continuous monitoring system constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(ii) You must collect continuous emissions monitoring system data in accordance with § 60.13(e)(2).

(iii) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities conducted during monitoring system malfunctions must not be included in calculations used to report emissions or operating levels. Any such periods must be reported in a deviation report.

(iv) Any data collected during periods when the monitoring system is out of control as specified in § 60.4880(a)(7)(i), repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or control activities conducted during out-of-control periods must not be included in calculations used to report emissions or operating levels. Any such periods that do not coincide with a monitoring system malfunction constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(v) You must use all the data collected during all periods except those periods specified in paragraphs (b)(6)(iii) and (b)(6)(iv) of this section in assessing the operation of the control device and associated control system.

(7) If you elect to use a continuous automated sampling system instead of conducting annual performance testing, you must:

(i) Install, calibrate, maintain, and operate a continuous automated sampling system according to the site-specific monitoring plan developed in § 60.58b(p)(1) through (p)(6), (p)(9), (p)(10), and (q).

(ii) Collect data according to § 60.58b(p)(5) and paragraph (b)(6) of this section.

(c) *Air pollution control device inspections.* You must conduct air pollution control device inspections that include, at a minimum, the following:

(1) Inspect air pollution control device(s) for proper operation.

(2) Generally observe that the equipment is maintained in good operating condition.

(3) Develop a site-specific monitoring plan according to the requirements in § 60.4880. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 60.13(i).

(d) *Bypass stack.* Use of the bypass stack at any time that sewage sludge is being charged to the SSI unit is an emissions standards deviation for all pollutants listed in Table 1 or 2 to this subpart. The use of the bypass stack during a performance test invalidates the performance test.

§ 60.4905 What are the monitoring and calibration requirements for compliance with my operating limits?

(a) You must install, operate, calibrate, and maintain the continuous parameter monitoring systems according to the requirements in paragraphs (a)(1) and (2) of this section.

(1) Meet the following general requirements for flow, pressure, pH, and operating temperature measurement devices:

(i) You must collect data using the continuous monitoring system at all times the affected SSI unit is operating and at the intervals specified in paragraph (a)(1)(ii) of this section, except for periods of monitoring system malfunctions that occur during periods specified in § 60.4880(a)(7)(i), repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments). Any such periods that you do not collect data using the continuous monitoring system constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(ii) You must collect continuous parameter monitoring system data in accordance with § 60.13(e)(2).

(iii) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities conducted during monitoring system malfunctions must not be included in calculations used to report emissions or operating levels. Any such periods must be reported in your annual deviation report.

(iv) Any data collected during periods when the monitoring system is out of control as specified in § 60.4880(a)(7)(i), repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or control activities conducted during out-of-control periods must not be included in calculations used to report emissions or operating levels. Any such periods that do not coincide with a monitoring system malfunction, as defined in § 60.4930, constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(v) You must use all the data collected during all periods except those periods specified in paragraphs (a)(1)(iii) and (a)(1)(iv) of this section in assessing the operation of the control device and associated control system.

(vi) Record the results of each inspection, calibration, and validation check.

(2) Operate and maintain your continuous monitoring system according to your monitoring plan required under § 60.4880. Additionally:

(i) For carrier gas flow rate monitors (for activated carbon injection), during the performance test conducted pursuant to § 60.4885, you must demonstrate that the system is maintained within ±5 percent accuracy, according to the procedures in appendix A to part 75 of this chapter.

(ii) For carrier gas pressure drop monitors (for activated carbon injection), during the performance test conducted pursuant to § 60.4885, you must demonstrate that the system is maintained within ±5 percent accuracy.

(b) You must operate and maintain your bag leak detection system in continuous operation according to your monitoring plan required under § 60.4880. Additionally:

(1) For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a bag leak detection system must be installed in each baghouse compartment or cell.

(2) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(3) You must initiate procedures to determine the cause of every alarm within 8 hours of the alarm, and you must alleviate the cause of the alarm within 24 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate matter 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 fabric filter 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 matter emissions.

(c) You must operate and maintain the continuous parameter monitoring systems specified in paragraphs (a) and (b) of this section in continuous operation according to your monitoring plan required under § 60.4880.

(d) If your SSI unit has a bypass stack, you must install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.

RECORDKEEPING AND REPORTING

§ 60.4910 What records must I keep?

You must maintain the items (as applicable) specified in paragraphs (a) through (n) of this section for a period of at least 5 years. All records must be available on site in either paper copy or computer-readable format that can

be printed upon request, unless an alternative format is approved by the Administrator.

(a) *Date*. Calendar date of each record.

(b) *Siting*. All documentation produced as a result of the siting requirements of §§60.4800 and 60.4805.

(c) *Operator Training*. Documentation of the operator training procedures and records specified in paragraphs (c)(1) through (c)(4) of this section. You must make available and readily accessible at the facility at all times for all SSI unit operators the documentation specified in paragraph (c)(1) of this section.

(1) Documentation of the following operator training procedures and information:

(i) Summary of the applicable standards under this subpart.

(ii) Procedures for receiving, handling, and feeding sewage sludge.

(iii) Incinerator startup, shutdown, and malfunction preventative and corrective procedures.

(iv) Procedures for maintaining proper combustion air supply levels.

(v) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(vi) Monitoring procedures for demonstrating compliance with the incinerator operating limits.

(vii) Reporting and recordkeeping procedures.

(viii) Procedures for handling ash.

(ix) A list of the materials burned during the performance test, if in addition to sewage sludge.

(x) For each qualified operator and other plant personnel who may operate the unit according to the provisions of §60.4835(a), the phone and/or pager number at which they can be reached during operating hours.

(2) Records showing the names of SSI unit operators and other plant personnel who may operate the unit according to the provisions of §60.4835(a), as follows:

(i) Records showing the names of SSI unit operators and other plant personnel who have completed review of the information in paragraph (c)(1) of this section as required by §60.4840(b), including the date of the initial review and all subsequent annual reviews.

(ii) Records showing the names of the SSI operators who have completed the operator training requirements under §60.4810, met the criteria for qualification under §60.4820, and maintained or renewed their qualification under §60.4825 or §60.4830. Records must include documentation of training, including the dates of their initial qualification and all subsequent renewals of such qualifications.

(3) Records showing the periods when no qualified operators were accessible for more than 8 hours, but less than 2 weeks, as required in §60.4835(a).

(4) Records showing the periods when no qualified operators were accessible for 2 weeks or more along with copies of reports submitted as required in §60.4835(b).

(d) *Air pollution control device inspections*. Records of the results of initial and annual air pollution control device inspections conducted as specified in §§60.4875 and 60.4900(c), including any required maintenance and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator.

(e) *Performance test reports*.

(1) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable.

(2) Retain a copy of the complete performance test report, including calculations.

(3) Keep a record of the hourly dry sludge feed rate measured during performance test runs, as specified in §60.4900(a)(2)(i).

(4) Keep any necessary records to demonstrate that the performance test was conducted under conditions representative of normal operations, including a record of the moisture content measured as required in §60.4900(a)(2)(ii) for each grab sample taken of the sewage sludge burned during the performance test.

(f) *Continuous monitoring data*. Records of the following data, as applicable:

(1) For continuous emissions monitoring systems, all 1-hour average concentrations of particulate matter, hydrogen chloride, carbon monoxide,

dioxins/furans total mass basis, mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead emissions.

(2) For continuous automated sampling systems, all average concentrations measured for mercury and dioxins/furans total mass basis at the frequencies specified in your monitoring plan.

(3) For continuous parameter monitoring systems:

(i) All 1-hour average values recorded for the following operating parameters, as applicable:

(A) Combustion chamber operating temperature (or afterburner temperature).

(B) If a wet scrubber is used to comply with the rule, pressure drop across each wet scrubber system, liquid flow rate to each wet scrubber used to comply with the emission limit in Table 1 or 2 to this subpart for particulate matter, cadmium, or lead, and scrubber liquid flow rate and scrubber liquid pH for each wet scrubber used to comply with an emission limit in Table 1 or 2 to this subpart for sulfur dioxide or hydrogen chloride.

(C) If an electrostatic precipitator is used to comply with the rule, secondary voltage and secondary amperage of the electrostatic precipitator collection plates, and effluent water flow rate at the outlet of the wet electrostatic precipitator.

(D) If activated carbon injection is used to comply with the rule, sorbent flow rate and carrier gas flow rate or pressure drop, as applicable.

(ii) All daily average values recorded for the feed rate and moisture content of the sewage sludge fed to the sewage sludge incinerator, monitored and calculated as specified in § 60.4850(f).

(iii) If a fabric filter is used to comply with the rule, the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in § 60.4890.

(iv) For other control devices for which you must establish operating limits under § 60.4855, you must maintain data collected for all operating parameters used to determine compliance with the operating limits, at the frequencies specified in your monitoring plan.

(g) *Other records for continuous monitoring systems.* You must keep the following records, as applicable:

(1) Keep records of any notifications to the Administrator in § 60.4915(h)(1) of starting or stopping use of a continuous monitoring system for determining compliance with any emissions limit.

(2) Keep records of any requests under § 60.4900(b)(5) that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen.

(3) If activated carbon injection is used to comply with the rule, the type of sorbent used and any changes in the type of sorbent used.

(h) *Deviation Reports.* Records of any deviation reports submitted under § 60.4915(e) and (f).

(i) *Equipment specifications and operation and maintenance requirements.* Equipment specifications and related operation and maintenance requirements received from vendors for the incinerator, emission controls, and monitoring equipment.

(j) *Inspections, calibrations, and validation checks of monitoring devices.* Records of inspections, calibrations, and validations checks of any monitoring devices as required under §§ 60.4900 and 60.4905.

(k) *Monitoring plan and performance evaluations for continuous monitoring systems.* Records of the monitoring plans required under § 60.4880, and records of performance evaluations required under § 60.4885(b)(5).

(l) *Less frequent testing.* If, consistent with 60.4885(a)(3), you elect to conduct performance tests less frequently than annually, you must keep annual records that document that your emissions in the 2 previous consecutive years were at or below 75 percent of the applicable emission limit in Table 1 or 2 to this subpart, and document that there were no changes in source operations or air pollution control equipment that would cause emissions of the

relevant pollutant to increase within the past 2 years.

(m) *Use of bypass stack.* Records indicating use of the bypass stack, including dates, times, and durations as required under § 60.4905(d).

(n) If a malfunction occurs, you must keep a record of the information submitted in your annual report in § 60.4915(d)(16).

§ 60.4915 What reports must I submit?

You must submit the reports specified in paragraphs (a) through (j) of this section. See Table 5 to this subpart for a summary of these reports.

(a) *Notification of construction.* You must submit a notification prior to commencing construction that includes the four items listed in paragraphs (a)(1) through (a)(4) of this section:

(1) A statement of intent to construct.

(2) The anticipated date of commencement of construction.

(3) All documentation produced as a result of the siting requirements of § 60.4805.

(4) Anticipated date of initial startup.

(b) *Notification of initial startup.* You must submit the information specified in paragraphs (b)(1) through (b)(5) of this section prior to initial startup:

(1) The maximum design dry sludge burning capacity.

(2) The anticipated and permitted maximum dry sludge feed rate.

(3) If applicable, the petition for site-specific operating limits specified in § 60.4855.

(4) The anticipated date of initial startup.

(5) The site-specific monitoring plan required under § 60.4880, at least 60 days before your initial performance evaluation of your continuous monitoring system.

(6) The site-specific monitoring plan for your ash handling system required under § 60.4880, at least 60 days before your initial performance test to demonstrate compliance with your fugitive ash emission limit.

(c) *Initial compliance report.* You must submit the following information no later than 60 days following the initial performance test.

(1) Company name, physical address, and mailing address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report.

(4) The complete test report for the initial performance test results obtained by using the test methods specified in Table 1 or 2 to this subpart.

(5) If an initial performance evaluation of a continuous monitoring system was conducted, the results of that initial performance evaluation.

(6) The values for the site-specific operating limits established pursuant to §§ 60.4850 and 60.4855 and the calculations and methods, as applicable, used to establish each operating limit.

(7) If you are using a fabric filter to comply with the emission limits, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required by § 60.4850(b).

(8) The results of the initial air pollution control device inspection required in § 60.4875, including a description of repairs.

(d) *Annual compliance report.* You must submit an annual compliance report that includes the items listed in paragraphs (d)(1) through (d)(16) of this section for the reporting period specified in paragraph (d)(3) of this section. You must submit your first annual compliance report no later than 12 months following the submission of the initial compliance report in paragraph (c) of this section. You must submit subsequent annual compliance reports no more than 12 months following the previous annual compliance report. (You may be required to submit these reports (or additional compliance information) more frequently by the title V operating permit required in § 60.4920.)

(1) Company name, physical address, and mailing address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If a performance test was conducted during the reporting period, the results of that performance test.

(i) If operating limits were established during the performance test, include the value for each operating limit and, as applicable, the method used to establish each operating limit, including calculations.

(ii) If activated carbon is used during the performance test, include the type of activated carbon used.

(5) For each pollutant and operating parameter recorded using a continuous monitoring system, the highest average value and lowest average value recorded during the reporting period, as follows:

(i) For continuous emission monitoring systems and continuous automated sampling systems, report the highest and lowest 24-hour average emission value.

(ii) For continuous parameter monitoring systems, report the following values:

(A) For all operating parameters except scrubber liquid pH, the highest and lowest 12-hour average values.

(B) For scrubber liquid pH, the highest and lowest 3-hour average values.

(6) If there are no deviations during the reporting period from any emission limit, emission standard, or operating limit that applies to you, a statement that there were no deviations from the emission limits, emission standard, or operating limits.

(7) Information for bag leak detection systems recorded under § 60.4910(f)(3)(iii).

(8) If a performance evaluation of a continuous monitoring system was conducted, the results of that performance evaluation. If new operating limits were established during the performance evaluation, include your calculations for establishing those operating limits.

(9) If you elect to conduct performance tests less frequently as allowed in § 60.4885(a)(3) and did not conduct a performance test during the reporting period, you must include the dates of the last two performance tests, a comparison of the emission level you achieved in the last two performance tests to the 75 percent emission limit threshold specified in § 60.4885(a)(3), and a statement as to whether there have been any process changes and whether the process change resulted in an increase in emissions.

(10) Documentation of periods when all qualified SSI unit operators were unavailable for more than 8 hours, but less than 2 weeks.

(11) Results of annual air pollution control device inspections recorded under § 60.4910(d) for the reporting period, including a description of repairs.

(12) If there were no periods during the reporting period when your continuous monitoring systems had a malfunction, a statement that there were no periods during which your continuous monitoring systems had a malfunction.

(13) If there were no periods during the reporting period when a continuous monitoring system was out of control, a statement that there were no periods during which your continuous monitoring system was out of control.

(14) If there were no operator training deviations, a statement that there were no such deviations during the reporting period.

(15) If you did not make revisions to your site-specific monitoring plan during the reporting period, a statement that you did not make any revisions to your site-specific monitoring plan during the reporting period. If you made revisions to your site-specific monitoring plan during the reporting period, a copy of the revised plan.

(16) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction that occurred during the reporting period and that caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 60.11(d), including actions taken to correct a malfunction.

(e) *Deviation reports.*

(1) You must submit a deviation report if:

(i) Any recorded operating parameter level, based on the averaging time specified in Table 3 to this subpart, is above the maximum operating limit or

below the minimum operating limit established under this subpart.

(ii) The bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period.

(iii) Any recorded 24-hour block average emissions level is above the emission limit, if a continuous monitoring system is used to comply with an emission limit.

(iv) There are visible emissions of combustion ash from an ash conveying system for more than 5 percent of the hourly observation period.

(v) A performance test was conducted that deviated from any emission limit in Table 1 or 2 to this subpart.

(vi) A continuous monitoring system was out of control.

(vii) You had a malfunction (*e.g.*, continuous monitoring system malfunction) that caused or may have caused any applicable emission limit to be exceeded.

(2) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

(3) For each deviation where you are using a continuous monitoring system to comply with an associated emission limit or operating limit, report the items described in paragraphs (e)(3)(i) through (e)(3)(viii) of this section.

(i) Company name, physical address, and mailing address.

(ii) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(iii) The calendar dates and times your unit deviated from the emission limits, emission standards, or operating limits requirements.

(iv) The averaged and recorded data for those dates.

(v) Duration and cause of each deviation from the following:

(A) Emission limits, emission standards, operating limits, and your corrective actions.

(B) Bypass events and your corrective actions.

(vi) Dates, times, and causes for monitor downtime incidents.

(vii) A copy of the operating parameter monitoring data during each deviation and any test report that documents the emission levels.

(viii) If there were periods during which the continuous monitoring system malfunctioned or was out of control, you must include the following information for each deviation from an emission limit or operating limit:

(A) The date and time that each malfunction started and stopped.

(B) The date, time, and duration that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(C) The date, time, and duration that each continuous monitoring system was out of control, including start and end dates and hours and descriptions of corrective actions taken.

(D) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction, during a period when the system as out of control, or during another period.

(E) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(F) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(G) A summary of the total duration of continuous monitoring system downtime during the reporting period, and the total duration of continuous monitoring system downtime as a percent of the total operating time of the SSI unit at which the continuous monitoring system downtime occurred during that reporting period.

(H) An identification of each parameter and pollutant that was monitored at the SSI unit.

(I) A brief description of the SSI unit.

(J) A brief description of the continuous monitoring system.

(K) The date of the latest continuous monitoring system certification or audit.

(L) A description of any changes in continuous monitoring system, processes, or controls since the last reporting period.

(4) For each deviation where you are not using a continuous monitoring system to comply with the associated emission limit or operating limit, report the following items:

(i) Company name, physical address, and mailing address.

(ii) Statement by a responsible official with that official's name, title, and signature, certifying the accuracy of the content of the report.

(iii) The total operating time of each affected SSI during the reporting period.

(iv) The calendar dates and times your unit deviated from the emission limits, emission standards, or operating limits requirements.

(v) The averaged and recorded data for those dates.

(vi) Duration and cause of each deviation from the following:

(A) Emission limits, emission standard, and operating limits, and your corrective actions.

(B) Bypass events and your corrective actions.

(vii) A copy of any performance test report that showed a deviation from the emission limits or standard.

(viii) A brief description of any malfunction reported in paragraph (e)(1)(vii) of this section, including a description of actions taken during the malfunction to minimize emissions in accordance with 60.11(d) and to correct the malfunction.

(f) *Qualified operator deviation.*

(1) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (f)(1)(i) and (f)(1)(ii) of this section.

(i) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (f)(1)(i)(A) through (f)(1)(i)(C) of this section.

(A) A statement of what caused the deviation.

(B) A description of actions taken to ensure that a qualified operator is accessible.

(C) The date when you anticipate that a qualified operator will be available.

(ii) Submit a status report to the Administrator every 4 weeks that includes the three items in paragraphs (f)(1)(ii)(A) through (f)(1)(ii)(C) of this section.

(A) A description of actions taken to ensure that a qualified operator is accessible.

(B) The date when you anticipate that a qualified operator will be accessible.

(C) Request for approval from the Administrator to continue operation of the SSI unit.

(2) If your unit was shut down by the Administrator, under the provisions of § 60.4835(b)(2)(i), due to a failure to provide an accessible qualified operator, you must notify the Administrator within 5 days of meeting § 60.4835(b)(2)(ii) that you are resuming operation.

(g) *Notification of a force majeure.* If a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure:

(1) You must notify the Administrator, in writing as soon as practicable following the date you first knew, or through due diligence should have known that the event may cause or caused a delay in conducting a performance test beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification must occur as soon as practicable.

(2) You must provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in conducting the performance test beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which you propose to conduct the performance test.

(h) *Other notifications and reports required.* You must submit other notifications as provided by § 60.7 and as follows:

(1) You must notify the Administrator 1 month before starting or stopping use of a continuous monitoring system for determining compliance with any emission limit.

(2) You must notify the Administrator at least 30 days prior to any performance test conducted to comply with the provisions of this subpart, to afford the Administrator the opportunity to have an observer present.

(3) As specified in § 60.4900(a)(8), you must notify the Administrator at least 7 days prior to the date of a rescheduled performance test for which notification was previously made in paragraph (h)(2) of this section.

(i) *Report submission form.*

(1) Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

(2) As of January 1, 2012 and within 60 days after the date of completing each performance test, as defined in § 63.2, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (*i.e.*, reference method) data and performance test (*i.e.*, compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (*see http://www.epa.gov/ttn/chief/ert/ert_tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

(j) *Changing report dates.* If the Administrator agrees, you may change the semi-annual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

TITLE V OPERATING PERMITS

§ 60.4920 Am I required to apply for and obtain a title V operating permit for my unit?

Yes, if you are subject to this subpart, you are required to apply for and obtain a Title V operating permit unless you meet the relevant requirements for an exemption specified in § 60.4780.

§ 60.4925 When must I submit a title V permit application for my new SSI unit?

(a) If your new SSI unit subject to this subpart is not subject to an earlier permit application deadline, a complete Title V permit application must be submitted on or before one of the dates specified in paragraph (a)(1) or (a)(2) of this section. (*See* section 503(c) of the Clean Air Act and 40 CFR 70.5(a)(1)(i) and 40 CFR 71.5(a)(1)(i)).

(1) For a SSI unit that commenced operation as a new SSI unit as of March 21, 2011, then a complete title V permit application must be submitted not later than March 21, 2012.

(2) For a SSI unit that does not commence operation as a new SSI unit until after March 21, 2011, then a complete title V permit application must be submitted not later than 12 months after the date the unit commences operation as a new source.

(b) If your new SSI unit subject to this subpart is subject to title V as a result of some triggering requirement(s) other than this subpart (for example, a unit subject to this subpart may be a major source or part of a major source), then your unit may be required to apply for a title V permit prior to the deadlines specified in paragraph (a) of this section. If more than one requirement triggers a source's obligation to apply for a title V permit, the 12-month timeframe for filing a title V permit application is triggered by the requirement that first causes the source to be subject to title V. (See section 503(c) of the Clean Air Act and 40 CFR 70.3(a) and (b), 40 CFR 70.5(a)(1)(i), 40 CFR 71.3(a) and (b), and 40 CFR 71.5(a)(1)(i).)

(c) A ''complete'' title V permit application is one that has been determined or deemed complete by the relevant permitting authority under section 503(d) of the Clean Air Act and 40 CFR 70.5(a)(2) or 40 CFR 71.5(a)(2). You must submit a complete permit application by the relevant application deadline in order to operate after this date in compliance with Federal law. (See sections 503(d) and 502(a) of the Clean Air Act and 40 CFR 70.7(b) and 40 CFR 71.7(b).)

DEFINITIONS

§ 60.4930 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and § 60.2.

Affected source means a sewage sludge incineration unit as defined in § 60.4930.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Auxiliary fuel means natural gas, liquefied petroleum gas, fuel oil, or diesel fuel.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (*i.e.*, baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Continuous automated sampling system means the total equipment and procedures for automated sample collection and sample recovery/analysis to determine a pollutant concentration or emission rate by collecting a single integrated sample(s) or multiple integrated sample(s) of the pollutant (or diluent gas) for subsequent on- or off-site analysis; integrated sample(s) collected are representative of the emissions for the sample time as specified by the applicable requirement.

Continuous emissions monitoring system means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

Continuous monitoring system (CMS) means a continuous emissions monitoring system, continuous automated sampling system, continuous parameter monitoring system, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by this subpart. The term refers to the total equipment used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Continuous parameter monitoring system means a monitoring system for continuously measuring and recording operating conditions associated with air pollution control device systems (*e.g.*, operating temperature, pressure, and power).

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limit, operating limit, or operator qualification and accessibility requirements.

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

Dioxins/furans means tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Electrostatic precipitator or wet electrostatic precipitator means an air pollution control device that uses both electrical forces and, if applicable, water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Existing sewage sludge incineration unit means a sewage sludge incineration unit the construction of which is commenced on or before October 14, 2010.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse.

Fluidized bed incinerator means an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring 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.

Modification means a change to an existing SSI unit later than September 21, 2011 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the SSI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the SSI unit used to calculate these costs, see the definition of SSI unit.

(2) Any physical change in the SSI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Modified sewage sludge incineration (SSI) unit means an existing SSI unit that undergoes a modification, as defined in this section.

Multiple hearth incinerator means a circular steel furnace that contains a number of solid refractory hearths and a central rotating shaft; rabble arms that are designed to slowly rake the sludge on the hearth are attached to the rotating shaft. Dewatered sludge enters at the top and proceeds downward through the furnace from hearth to hearth, pushed along by the rabble arms.

New sewage sludge incineration unit means a SSI unit the construction of which is commenced after October 14, 2010 which would be applicable to such unit or a modified solid waste incineration unit.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of sewage sludge is combusted at any time in the SSI unit.

Particulate matter means filterable particulate matter emitted from SSI units as measured by Method 5 at 40 CFR part 60, appendix A–3 or Methods 26A or 29 at 40 CFR part 60, appendix A–8.

Power input to the electrostatic precipitator means the product of the test-run average secondary voltage and the test-run average secondary amperage to the electrostatic precipitator collection plates.

Process change means a significant permit revision, but only with respect to those pollutant-specific emission units for which the proposed permit revision is applicable, including but not limited to:

(1) A change in the process employed at the wastewater treatment facility associated with the affected SSI unit (*e.g.*, the addition of tertiary treatment at the facility, which changes the method used for disposing of process solids and processing of the sludge prior to incineration).

(2) A change in the air pollution control devices used to comply with the emission limits for the affected SSI unit (*e.g.*, change in the sorbent used for activated carbon injection).

Sewage sludge means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incineration unit or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

Sewage sludge feed rate means the rate at which sewage sludge is fed into the incinerator unit.

Sewage sludge incineration (SSI) unit means an incineration unit combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter. Sewage sludge incineration unit designs include fluidized bed and multiple hearth. A SSI unit also includes, but is not limited to, the sewage sludge feed system, auxiliary fuel feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The SSI unit includes all ash handling systems connected to the bottom ash handling system. The combustion unit bottom ash system ends at the truck loading station or similar equipment that transfers the ash to final disposal. The SSI

unit does not include air pollution control equipment or the stack.

Shutdown means the period of time after all sewage sludge has been combusted in the primary chamber.

Solid waste means any garbage, refuse, sewage sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014).

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup means the period of time between the activation, including the firing of fuels (*e.g.*, natural gas or distillate oil), of the system and the first feed to the unit.

Toxic equivalency means the product of the concentration of an individual dioxin isomer in an environmental mixture and the corresponding estimate of the compound-specific toxicity relative to tetrachlorinated dibenzo-p-dioxin, referred to as the toxic equivalency factor for that compound. Table 4 to this subpart lists the toxic equivalency factors.

Wet scrubber means an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquid to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

You means the owner or operator of a SSI unit that meets the criteria in § 60.4770.

TABLE 1 TO SUBPART LLLL OF PART 60—EMISSION LIMITS AND STANDARDS FOR NEW FLUIDIZED BED SEWAGE SLUDGE INCINERATION UNITS

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Particulate matter	9.6 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 5 at 40 CFR part 60, appendix A–3; Method 26A or Method 29 at 40 CFR part 60, appendix A–8).
Hydrogen chloride	0.24 parts per million by dry volume.	3-run average (Collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 26A at 40 CFR part 60, appendix A–8).
Carbon monoxide	27 parts per million by dry volume.	24-hour block average (using 1-hour averages of data). For determining compliance with the carbon monoxide concentration limit using carbon monoxide CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured carbon monoxide concentration without correcting for oxygen concentration in averaging with other carbon monoxide concentrations (corrected to 7 percent oxygen) to determine the 24-hour average value.	Continuous emissions monitoring system. (Performance Specification 4B of this part, using a low-range span of 100 ppm and a high-range span of 1000 ppm, and a RA of 0.5 ppm instead of 5 ppm specified in section 13.2. For the cylinder gas audit of Procedure 1, ±15% or 0.5 whichever is greater).

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Dioxins/furans (total mass basis); or Dioxins/furans (toxic equivalency basis) [b]	0.013 nanograms per dry standard cubic meter (total mass basis); or 0.0044 nanograms per dry standard cubic meter (toxic equivalency basis).	3-run average (collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Mercury	0.0010 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008),[c] collect a minimum volume of 3 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A–8).	Performance test (Method 29 at 40 CFR part 60, appendix A–8; Method 30B at 40 CFR part 60, appendix A–8; or ASTM D6784–02 (Reapproved 2008).[c]
Oxides of nitrogen	30 parts per million by dry volume.	3-run average (Collect sample for a minimum duration of one hour per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Sulfur dioxide	5.3 parts per million by dry volume.	3-run average (For Method 6, collect a minimum volume of 100 liters per run. For Method 6C, sample for a minimum duration of one hour per run).	Performance test (Method 6 or 6C at 40 CFR part 40, appendix A–4; or ANSI/ASME PTC 19.10–1981.[c]
Cadmium	0.0011 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use GFAAS or ICP/MS for the analytical finish.
Lead	0.00062 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8. Use GFAAS or ICP/MS for the analytical finish.
Fugitive emissions from ash handling.	Visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 of appendix A–7 of this part).

[a] All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.
[b] You have the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.
[c] Incorporated by reference, *see* § 60.17.

TABLE 2 TO SUBPART LLLL OF PART 60—EMISSION LIMITS AND STANDARDS FOR NEW MULTIPLE HEARTH SEWAGE SLUDGE INCINERATION UNITS

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Particulate matter	60 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 0.75 dry standard cubic meters per run).	Performance test (Method 5 at 40 CFR part 60, appendix A–3; Method 26A or Method 29 at 40 CFR part 60, appendix A–8).
Hydrogen chloride	1.2 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Carbon monoxide	52 parts per million by dry volume.	24-hour block average (using 1-hour averages of data).	Continuous emissions monitoring system. (Performance Specification 4B of this part, using a low-range span of 100 ppm and a high-range span of 1000 ppm, and a relative accuracy of 0.5 ppm instead of 5 ppm specified in section 13.2. For the cylinder gas audit of Procedure 1, ±15% or 0.5 whichever is greater).
Dioxins/furans (total mass basis); or Dioxins/furans (toxic equivalency basis) [b]	0.045 nanograms per dry standard cubic meter (total mass basis); or 0.0022 nanograms per dry standard cubic meter (toxic equivalency basis).	3-run average (collect a minimum volume of 3 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Mercury	0.15 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008),[c] collect a minimum volume of 1 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A–8).	Performance test (Method 29 at 40 CFR part 60, appendix A–8; Method 30B at 40 CFR part 60, appendix A–8; or ASTM D6784–02 (Reapproved 2008).[c]
Oxides of nitrogen	210 parts per million by dry volume.	3-run average (Collect sample for a minimum duration of one hour per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Sulfur dioxide	26 parts per million by dry volume.	3-run average (For Method 6, collect a minimum volume of 200 liters per run. For Method 6C, collect sample for a minimum duration of one hour per run).	Performance test (Method 6 or 6C at 40 CFR part 40, appendix A–4; or ANSI/ASME PTC 19.10–1981.[c]
Cadmium	0.0024 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use GFAAS or ICP/MS for the analytical finish.
Lead	0.0035 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8. Use GFAAS or ICP/MS for the analytical finish.
Fugitive emissions from ash handling.	Visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 of appendix A–7 of this part).

[a] All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.
[b] You have the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.
[c] Incorporated by reference, *see* § 60.17.

TABLE 3 TO SUBPART LLLL OF PART 60—OPERATING PARAMETERS FOR NEW SEWAGE SLUDGE INCINERATION UNITS [A]

For these operating parameters	You must establish these operating limits	And monitor using these minimum frequencies		
		Data measurement	Data recording [b]	Data averaging period for compliance
All sewage sludge incineration units				
Combustion chamber operating temperature or afterburner temperature.	Minimum combustion chamber operating temperature or afterburner temperature.	Continuous	Every 15 minutes	12-hour block.
Fugitive emissions from ash handling.	Site-specific operating requirements.	Not applicable	Not applicable	Not applicable.
Scrubber				
Pressure drop across each wet scrubber.	Minimum pressure drop	Continuous	Every 15 minutes	12-hour block.
Scrubber liquid flow rate	Minimum flow rate	Continuous	Every 15 minutes	12-hour block.
Scrubber liquid pH	Minimum pH	Continuous	Every 15 minutes	3-hour block.
Fabric Filter				
Alarm time of the bag leak detection system alarm.	Maximum alarm time of the bag leak detection system alarm (this operating limit is provided in § 60.4850 and is not established on a site-specific basis).			
Electrostatic precipitator				
Secondary voltage of the electrostatic precipitator collection plates.	Minimum power input to the electrostatic precipitator collection plates.	Continuous	Hourly	12-hour block.
Secondary amperage of the electrostatic precipitator collection plates.				
Effluent water flow rate at the outlet of the electrostatic precipitator.	Minimum effluent water flow rate at the outlet of the electrostatic precipitator.	Hourly	Hourly	12-hour block.
Activated carbon injection				
Mercury sorbent injection rate	Minimum mercury sorbent injection rate.	Hourly	Hourly	12-hour block.
Dioxin/furan sorbent injection rate	Minimum dioxin/furan sorbent injection rate.			
Carrier gas flow rate or carrier gas pressure drop.	Minimum carrier gas flow rate or minimum carrier gas pressure drop.	Continuous	Every 15 minutes	12-hour block.

[a] As specified in § 60.4870, you may use a continuous emissions monitoring system or continuous automated sampling system in lieu of establishing certain operating limits.

[b] This recording time refers to the minimum frequency that the continuous monitor or other measuring device initially records data. For all data recorded every 15 minutes, you must calculate hourly arithmetic averages. For all parameters, you use hourly averages to calculate the 12-hour or 3-hour block average specified in this table for demonstrating compliance. You maintain records of 1-hour averages.

TABLE 4 TO SUBPART LLLL OF PART 60—TOXIC EQUIVALENCY FACTORS

Dioxin/furan isomer	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.3
1,2,3,7,8-pentachlorinated dibenzofuran	0.03
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1

Dioxin/furan isomer	Toxic equivalency factor
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.0003

TABLE 5 TO SUBPART LLLL OF PART 60—SUMMARY OF REPORTING REQUIREMENTS FOR NEW SEWAGE SLUDGE INCINERATION UNITS [A]

Report	Due date	Contents	Reference
Notification of construction.	Prior to commencing construction.	1. Statement of intent to construct 2. Anticipated date of commencement of construction. 3. Documentation for siting requirements. 4. Anticipated date of initial startup.	§60.4915(a).
Notification of initial startup.	Prior to initial startup	1. Maximum design dry sewage sludge burning capacity. 2. Anticipated and permitted maximum feed rate. 3. If applicable, the petition for site-specific operating limits. 4. Anticipated date of initial startup. 5. Site-specific monitoring plan. 6. The site-specific monitoring plan for your ash handling system.	§60.4915(b).
Initial compliance report	No later than 60 days following the initial performance test.	1. Company name and address 2. Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report. 3. Date of report. 4. Complete test report for the initial performance test. 5. Results of CMS [b] performance evaluation. 6. The values for the site-specific operating limits and the calculations and methods, as applicable, used to establish each operating limit. 7. Documentation of installation of bag leak detection system for fabric filter. 8. Results of initial air pollution control device inspection, including a description of repairs.	§60.4915(c).

Report	Due date	Contents	Reference
Annual compliance report.	No later than 12 months following the submission of the initial compliance report; subsequent reports are to be submitted no more than 12 months following the previous report.	1. Company name and address ..... 2. Statement and signature by responsible official. 3. Date and beginning and ending dates of report. 4. If a performance test was conducted during the reporting period, the results of the test, including any new operating limits and associated calculations and the type of activated carbon used, if applicable. 5. For each pollutant and operating parameter recorded using a CMS, the highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable. 6. If no deviations from emission limits, emission standards, or operating limits occurred, a statement that no deviations occurred. 7. If a fabric filter is used, the date, time, and duration of alarms. 8. If a performance evaluation of a CMS was conducted, the results, including any new operating limits and their associated calculations. 9. If you met the requirements of § 60.4885(a)(3) and did not conduct a performance test, include the dates of the last three performance tests, a comparison to the 50 percent emission limit threshold of the emission level achieved in the last three performance tests, and a statement as to whether there have been any process changes. 10. Documentation of periods when all qualified SSI unit operators were unavailable for more than 8 hours but less than 2 weeks. 11. Results of annual pollutions control device inspections, including description of repairs. 12. If there were no periods during which your CMSs had malfunctions, a statement that there were no periods during which your CMSs had malfunctions. 13. If there were no periods during which your CMSs were out of control, a statement that there were no periods during which your CMSs were out of control. 14. If there were no operator training deviations, a statement that there were no such deviations. 15. Information on monitoring plan revisions, including a copy of any revised monitoring plan.	§§ 60.4915(d).

Report	Due date	Contents	Reference
Deviation report (deviations from emission limits, emission standards, or operating limits, as specified in § 60.4915(e)(1)).	By August 1 of a calendar year for data collected during the first half of the calendar year; by February 1 of a calendar year for data collected during the second half of the calendar year.	*If using a CMS:* 1. Company name and address 2. Statement by a responsible official. 3. The calendar dates and times your unit deviated from the emission limits or operating limits. 4. The averaged and recorded data for those dates. 5. Duration and cause of each deviation. 6. Dates, times, and causes for monitor downtime incidents. 7. A copy of the operating parameter monitoring data during each deviation and any test report that documents the emission levels. 8. For periods of CMS malfunction or when a CMS was out of control, you must include the information specified in § 60.4915(e)(3)(viii). *If not using a CMS:* ..... 1. Company name and address ..... 2. Statement by a responsible official. 3. The total operating time of each affected SSI. 4. The calendar dates and times your unit deviated from the emission limits, emission standard, or operating limits. 5. The averaged and recorded data for those dates. 6. Duration and cause of each deviation. 7. A copy of any performance test report that showed a deviation from the emission limits or standards. 8. A brief description of any malfunction, a description of actions taken during the malfunction to minimize emissions, and corrective action taken.	§ 60.4915(e).
Notification of qualified operator deviation (if all qualified operators are not accessible for 2 weeks or more).	Within 10 days of deviation.	1. Statement of cause of deviation ..... 2. Description of actions taken to ensure that a qualified operator will be available. 3. The date when a qualified operator will be accessible.	§ 60.4915(f).
Notification of status of qualified operator deviation.	Every 4 weeks following notification of deviation.	1. Description of actions taken to ensure that a qualified operator is accessible. 2. The date when you anticipate that a qualified operator will be accessible. 3. Request for approval to continue operation.	§ 60.4915(f).
Notification of resumed operation following shutdown (due to qualified operator deviation and as specified in § 60.4835(b)(2)(i).	Within 5 days of obtaining a qualified operator and resuming operation.	1. Notification that you have obtained a qualified operator and are resuming operation.	§ 60.4915(f).
Notification of a force majeure.	As soon as practicable following the date you first knew, or through due diligence should have known that the event may cause or caused a delay in conducting a performance test beyond the regulatory deadline; the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification must occur as soon as practicable.	1. Description of the force majeure event ..... 2. Rationale for attributing the delay in conducting the performance test beyond the regulatory deadline to the force majeure. 3. Description of the measures taken or to be taken to minimize the delay. 4. Identification of the date by which you propose to conduct the performance test.	§ 60.4915(g).

Report	Due date	Contents	Reference
Notification of intent to start or stop use of a CMS.	1 month before starting or stopping use of a CMS.	1. Intent to start or stop use of a CMS	§ 60.4915(h).
Notification of intent to conduct a performance test.	At least 30 days prior to the performance test.	1. Intent to conduct a performance test to comply with this subpart.	
Notification of intent to conduct a rescheduled performance test.	At least 7 days prior to the date of a rescheduled performance test.	1. Intent to conduct a rescheduled performance test to comply with this subpart.	

[a] This table is only a summary, see the referenced sections of the rule for the complete requirements.
[b] CMS means continuous monitoring system.

Subpart MMMM—Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units

SOURCE: 76 FR 15404, Mar. 21, 2011, unless otherwise noted.

INTRODUCTION

60.5000 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from sewage sludge incineration (SSI) units. The pollutants addressed by these emission guidelines are listed in Tables 2 and 3 to this subpart. These emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act and subpart B of this part. To the extent any requirement of this subpart is inconsistent with the requirements of subpart A of this part, the requirements of this subpart will apply.

§ 60.5005 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a state or United States protectorate with one or more SSI units that commenced construction on or before October 14, 2010, you must submit a state plan to U.S. Environmental Protection Agency (EPA) that implements the emission guidelines contained in this subpart.

(b) You must submit the state plan to EPA by March 21, 2012.

§ 60.5010 Is a state plan required for all states?

No. You are not required to submit a state plan if there are no SSI units for which construction commenced on or before October 14, 2010 in your state, and you submit a negative declaration letter in place of the state plan.

§ 60.5015 What must I include in my state plan?

(a) You must include the nine items described in paragraphs (a)(1) through (a)(9) of this section in your state plan.

(1) Inventory of affected SSI units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected SSI units in your state.

(3) Compliance schedules for each affected SSI unit.

(4) Emission limits, emission standards, operator training and qualification requirements, and operating limits for affected SSI units that are at least as protective as the emission guidelines contained in this subpart.

(5) Performance testing, recordkeeping, and reporting requirements.

(6) Certification that the hearing on the state plan was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(7) Provision for state progress reports to EPA.

(8) Identification of enforceable state mechanisms that you selected for implementing the emission guidelines of this subpart.

(9) Demonstration of your state's legal authority to carry out the sections 111(d) and 129 state plan.

(b) Your state plan may deviate from the format and content of the emission guidelines contained in this subpart. However, if your state plan does deviate in content, you must demonstrate that your state plan is at least as protective as the emission guidelines contained in this subpart. Your state plan must address regulatory applicability, increments of progress for retrofit, operator training and qualification, emission limits and standards, performance testing, operating limits, monitoring, and recordkeeping and reporting.

(c) You must follow the requirements of subpart B of this part (Adoption and Submittal of state plans for Designated Facilities) in your state plan.

§ 60.5020 Is there an approval process for my state plan?

Yes. The EPA will review your state plan according to § 60.27.

§ 60.5025 What if my state plan is not approvable?

If you do not submit an approvable state plan (or a negative declaration letter) by March 21, 2013, EPA will develop a Federal plan according to § 60.27 to implement the emission guidelines contained in this subpart. Owners and operators of SSI units not covered by an approved state plan must comply with the Federal plan. The Federal plan is an interim action and will be automatically withdrawn when your state plan is approved.

§ 60.5030 Is there an approval process for a negative declaration letter?

No. The EPA has no formal review process for negative declaration letters. Once your negative declaration letter has been received, EPA will place a copy in the public docket and publish a notice in the FEDERAL REGISTER. If, at a later date, a SSI unit for which construction commenced on or before October 14, 2010 is found in your state, the Federal plan implementing the emission guidelines contained in this subpart would automatically apply to that SSI unit until your state plan is approved.

§ 60.5035 What compliance schedule must I include in my state plan?

(a) For SSI units that commenced construction on or before October 14, 2010, your state plan must include compliance schedules that require SSI units to achieve final compliance as expeditiously as practicable after approval of the state plan but not later than the earlier of the two dates specified in paragraphs (a)(1) and (a)(2) of this section.

(1) March 21, 2016.

(2) Three years after the effective date of state plan approval.

(b) For compliance schedules that extend more than 1 year following the effective date of state plan approval, state plans must include dates for enforceable increments of progress as specified in § 60.5090.

§ 60.5040 Are there any state plan requirements for this subpart that apply instead of the requirements specified in subpart B?

Yes. Subpart B establishes general requirements for developing and processing section 111(d) state plans. This subpart applies instead of the requirements in subpart B of this part, as specified in paragraphs (a) and (b) of this section:

(a) State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all SSI units to comply by the dates specified in § 60.5035. This applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in § 60.24(f).

(b) State plans developed to implement this subpart are required to include two increments of progress for the affected SSI units. These two minimum increments are the final control plan submittal date and final compliance date in § 60.21(h)(1) and (5). This applies instead of the requirement of § 60.24(e)(1) that would require a state plan to include all five increments of progress for all SSI units.

§ 60.5045 In lieu of a state plan submittal, are there other acceptable option(s) for a state to meet its section 111(d)/129 (b)(2) obligations?

Yes, a state may meet its Clean Air Act section 111(d)/129 obligations by submitting an acceptable written request for delegation of the Federal plan that meets the requirements of this section. This is the only other option for a state to meet its section 111(d)/129 obligations.

(a) An acceptable Federal plan delegation request must include the following:

(1) A demonstration of adequate resources and legal authority to administer and enforce the Federal plan.

(2) The items under § 60.5015(a)(1), (a)(2), and (a)(7).

(3) Certification that the hearing on the state delegation request, similar to the hearing for a state plan submittal, was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(4) A commitment to enter into a Memorandum of Agreement with the Regional Administrator that sets forth the terms, conditions, and effective date of the delegation and that serves as the mechanism for the transfer of authority. Additional guidance and information is given in EPA's Delegation Manual, Item 7–139, Implementation and Enforcement of 111(d)(2) and 111(d)/(2)/129 (b)(3) Federal plans.

(b) A state with an already approved SSI Clean Air Act section 111(d)/129 state plan is not precluded from receiving EPA approval of a delegation request for the revised Federal plan, provided the requirements of paragraph (a) of this section are met, and at the time of the delegation request, the state also requests withdrawal of EPA's previous state plan approval.

(c) A state's Clean Air Act section 111(d)/129 obligations are separate from its obligations under title V of the Clean Air Act.

§ 60.5050 What authorities will not be delegated to state, local, or tribal agencies?

The authorities that will not be delegated to state, local, or tribal agencies are specified in paragraphs (a) through (g) of this section.

(a) Approval of alternatives to the emission limits and standards in Tables 2 and 3 to this subpart and operating limits established under § 60.5175 or § 60.5190.

(b) Approval of major alternatives to test methods.

(c) Approval of major alternatives to monitoring.

(d) Approval of major alternatives to recordkeeping and reporting.

(e) The requirements in § 60.5175.

(f) The requirements in § 60.5155(b)(2).

(g) Performance test and data reduction waivers under § 60.8(b).

§ 60.5055 Does this subpart directly affect SSI unit owners and operators in my state?

(a) No. This subpart does not directly affect SSI unit owners and operators in your state. However, SSI unit owners and operators must comply with the state plan you develop to implement the emission guidelines contained in this subpart. States may choose to incorporate the model rule text directly in their state plan.

(b) If you do not submit an approvable plan to implement and enforce the guidelines contained in this subpart by March 21, 2012, EPA will implement and enforce a Federal plan, as provided in § 60.5025, to ensure that each unit within your state that commenced construction on or before October 14, 2010 reaches compliance with all the provisions of this subpart by the dates specified in § 60.5035.

APPLICABILITY OF STATE PLANS

§ 60.5060 What SSI units must I address in my state plan?

(a) Your state plan must address SSI units that meet all three criteria described in paragraphs (a)(1) through (3) of this section.

(1) SSI units in your state that commenced construction on or before October 14, 2010.

(2) SSI units that meet the definition of a SSI unit as defined in § 60.5250.

(3) SSI units not exempt under § 60.5065.

(b) If the owner or operator of a SSI unit makes changes that meet the definition of modification after September

21, 2011, the SSI unit becomes subject to subpart LLLL of this part and the state plan no longer applies to that unit.

(c) If the owner or operator of a SSI unit makes physical or operational changes to a SSI unit for which construction commenced on or before September 21, 2011 primarily to comply with your state plan, subpart LLLL of this part does not apply to that unit. Such changes do not qualify as modifications under subpart LLLL of this part.

§ 60.5065 What SSI units are exempt from my state plan?

This subpart exempts combustion units that incinerate sewage sludge and are not located at a wastewater treatment facility designed to treat domestic sewage sludge. These units may be subject to another subpart of this part (*e.g.*, subpart CCCC of this part). The owner or operator of such a combustion unit must notify the Administrator of an exemption claim under this section.

USE OF MODEL RULE

§ 60.5070 What is the "model rule" in this subpart?

(a) The model rule is the portion of these emission guidelines (§§ 60.5085 through 60.5250) that addresses the regulatory requirements applicable to SSI units. The model rule provides these requirements in regulation format. You must develop a state plan that is at least as protective as the model rule. You may use the model rule language as part of your state plan. Alternative language may be used in your state plan if you demonstrate that the alternative language is at least as protective as the model rule contained in this subpart.

(b) In the model rule of §§ 60.5085 through 60.5250, ''you'' and ''Administrator'' have the meaning specified in § 60.5250.

§ 60.5075 How does the model rule relate to the required elements of my state plan?

Use the model rule to satisfy the state plan requirements specified in § 60.5015(a)(3) through (a)(5).

§ 60.5080 What are the principal components of the model rule?

The model rule contains the nine major components listed in paragraphs (a) through (i) of this section.

(a) Increments of progress toward compliance.

(b) Operator training and qualification.

(c) Emission limits, emission standards, and operating limits.

(d) Initial compliance requirements.

(e) Continuous compliance requirements.

(f) Performance testing, monitoring, and calibration requirements.

(g) Recordkeeping and reporting.

(h) Definitions.

(i) Tables.

MODEL RULE—INCREMENTS OF PROGRESS

§ 60.5085 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of state plan approval, you must meet the two increments of progress specified in paragraphs (a) and (b) of this section.

(a) Submit a final control plan.

(b) Achieve final compliance.

§ 60.5090 When must I complete each increment of progress?

Table 1 to this subpart specifies compliance dates for each increment of progress.

§ 60.5095 What must I include in the notifications of achievement of increments of progress?

Your notification of achievement of increments of progress must include the three items specified in paragraphs (a) through (c) of this section.

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with each increment of progress.

(c) Signature of the owner or operator of the SSI unit.

§ 60.5100 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§ 60.5105 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in Table 1 to this subpart. You must inform the Administrator that you did not meet the increment, and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§ 60.5110 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must satisfy the two requirements specified in paragraphs (a) and (b) of this section.

(a) Submit the final control plan that includes the four items described in paragraphs (a)(1) through (a)(4) of this section.

(1) A description of the devices for air pollution control and process changes that you will use to comply with the emission limits and standards and other requirements of this subpart.

(2) The type(s) of waste to be burned, if waste other than sewage sludge is burned in the unit.

(3) The maximum design sewage sludge burning capacity.

(4) If applicable, the petition for site-specific operating limits under § 60.5175.

(b) Maintain an onsite copy of the final control plan.

§ 60.5115 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected SSI unit is brought online, all necessary process changes and air pollution control devices would operate as designed.

§ 60.5120 What must I do if I close my SSI unit and then restart it?

(a) If you close your SSI unit but will restart it prior to the final compliance date in your state plan, you must meet the increments of progress specified in § 60.5085.

(b) If you close your SSI unit but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limits, emission standards, and operating limits on the date your unit restarts operation.

§ 60.5125 What must I do if I plan to permanently close my SSI unit and not restart it?

If you plan to close your SSI unit rather than comply with the state plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

§ 60.5130 What are the operator training and qualification requirements?

(a) A SSI unit cannot be operated unless a fully trained and qualified SSI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified SSI unit operator may operate the SSI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified SSI unit operators are temporarily not accessible, you must follow the procedures in § 60.5155.

(b) Operator training and qualification must be obtained through a state-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (c)(3) of this section.

(1) Training on the 10 subjects listed in paragraphs (c)(1)(i) through (c)(1)(x) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, sewage sludge feeding, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to prevent malfunctions or to prevent conditions that may lead to malfunctions.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(2) An examination designed and administered by the state-approved program.

(3) Written material covering the training course topics that may serve as reference material following completion of the course.

§ 60.5135 When must the operator training course be completed?

The operator training course must be completed by the later of the three dates specified in paragraphs (a) through (c) of this section.

(a) The final compliance date (Increment 2).

(b) Six months after your SSI unit startup.

(c) Six months after an employee assumes responsibility for operating the SSI unit or assumes responsibility for supervising the operation of the SSI unit.

§ 60.5140 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.5130(b).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.5130(c)(2).

§ 60.5145 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, sewage sludge feeding, and ash handling.

(c) Inspection and maintenance.

(d) Prevention of malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

§ 60.5150 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification before you begin operation of a SSI unit by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.5145.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.5140(a).

§ 60.5155 What if all the qualified operators are temporarily not accessible?

If a qualified operator is not at the facility and cannot be at the facility within 1 hour, you must meet the criteria specified in either paragraph (a) or (b) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When a qualified operator is not accessible for more than 8 hours, the SSI unit may be operated for less than 2 weeks by other plant personnel who are familiar with the operation of the SSI unit and who have completed a review of the information specified in § 60.5160 within the past 12 months. However, you must record the period when a qualified operator was not accessible and include this deviation in the annual report as specified under § 60.5235(d).

(b) When a qualified operator is not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (b)(1) and (b)(2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to the Administrator every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible, and requesting approval from the Administrator to continue operation of the SSI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (b)(1) of this section.

(i) If the Administrator notifies you that your request to continue operation of the SSI unit is disapproved, the SSI unit may continue operation for 30 days, and then must cease operation.

(ii) Operation of the unit may resume if a qualified operator is accessible as required under §60.5130(a). You must notify the Administrator within 5 days of having resumed operations and of having a qualified operator accessible.

§60.5160 What site-specific documentation is required and how often must it be reviewed by qualified operators and plant personnel?

(a) You must maintain at the facility the documentation of the operator training procedures specified under §60.5230(c)(1) and make the documentation readily accessible to all SSI unit operators.

(b) You must establish a program for reviewing the information listed in §60.5230(c)(1) with each qualified incinerator operator and other plant personnel who may operate the unit according to the provisions of §60.5155(a), according to the following schedule:

(1) The initial review of the information listed in §60.5230(c)(1) must be conducted within 6 months after the effective date of this subpart or prior to an employee's assumption of responsibilities for operation of the SSI unit, whichever date is later.

(2) Subsequent annual reviews of the information listed in §60.5230(c)(1) must be conducted no later than 12 months following the previous review.

MODEL RULE—EMISSION LIMITS, EMISSION STANDARDS, AND OPERATING LIMITS AND REQUIREMENTS

§60.5165 What emission limits and standards must I meet and by when?

You must meet the emission limits and standards specified in Table 2 or 3 to this subpart by the final compliance date under the approved state plan, Federal plan, or delegation, as applicable. The emission limits and standards apply at all times the unit is operating and during periods of malfunction. The emission limits and standards apply to emissions from a bypass stack or vent while sewage sludge is in the combustion chamber (*i.e.*, until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).

§60.5170 What operating limits and requirements must I meet and by when?

You must meet, as applicable, the operating limits and requirements specified in paragraphs (a) through (d) and (h) of this section, according to the schedule specified in paragraph (e) of this section. The operating parameters for which you will establish operating limits for a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection are listed in Table 4 to this subpart. You must comply with the operating requirements in paragraph (f) of this section and the requirements in paragraph (g) of this section for meeting any new operating limits, re-established in §60.5210. The operating limits apply at all times that sewage sludge is in the combustion chamber (*i.e.*, until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).

(a) You must meet a site-specific operating limit for minimum operating

temperature of the combustion chamber (or afterburner combustion chamber) that you establish in § 60.5190.

(b) If you use a wet scrubber, electrostatic precipitator, activated carbon injection, or afterburner to comply with an emission limit, you must meet the site-specific operating limits that you establish in § 60.5190 for each operating parameter associated with each air pollution control device.

(c) If you use a fabric filter to comply with the emission limits, you must install the bag leak detection system specified in §§ 60.5200(b) and 60.5225(b)(3)(i) and operate the bag leak detection system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. You must calculate the alarm time as specified in § 60.5210(a)(2)(i).

(d) You must meet the operating requirements in your site-specific fugitive emission monitoring plan, submitted as specified in § 60.5200(d) to ensure that your ash handling system will meet the emission standard for fugitive emissions from ash handling.

(e) You must meet the operating limits and requirements specified in paragraphs (a) through (d) of this section by the final compliance date under the approved state plan, Federal plan, or delegation, as applicable.

(f) You must monitor the feed rate and moisture content of the sewage sludge fed to the sewage sludge incinerator, as specified in paragraphs (f)(1) and (f)(2) of this section.

(1) Continuously monitor the sewage sludge feed rate and calculate a daily average for all hours of operation during each 24-hour period. Keep a record of the daily average feed rate, as specified in § 60.5230(f)(3)(ii).

(2) Take at least one grab sample per day of the sewage sludge fed to the sewage sludge incinerator. If you take more than one grab sample in a day, calculate the daily average for the grab samples. Keep a record of the daily average moisture content, as specified in § 60.5230(f)(3)(ii).

(g) For the operating limits and requirements specified in paragraphs (a) through (d) and (h) of this section, you must meet any new operating limits and requirements, re-established according to § 60.5210(d).

(h) If you use an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, or activated carbon injection to comply with the emission limits in Table 2 or 3 to this subpart, you must meet any site-specific operating limits or requirements that you establish as required in § 60.5175.

§ 60.5175 How do I establish operating limits if I do not use a wet scrubber, fabric filter, electrostatic precipitator, activated carbon injection, or afterburner, or if I limit emissions in some other manner, to comply with the emission limits?

If you use an air pollution control device other than a wet scrubber, fabric filter, electrostatic precipitator, activated carbon injection, or afterburner, or limit emissions in some other manner (*e.g.*, materials balance) to comply with the emission limits in § 60.5165, you must meet the requirements in paragraphs (a) and (b) of this section.

(a) Meet the applicable operating limits and requirements in § 60.4850, and establish applicable operating limits according to § 60.5190.

(b) Petition the Administrator for specific operating parameters, operating limits, and averaging periods to be established during the initial performance test and to be monitored continuously thereafter.

(1) You are responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. You must not conduct the initial performance test until after the petition has been approved by the Administrator, and you must comply with the operating limits as written, pending approval by the Administrator. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves you of the responsibility to comply with any provision of this subpart.

(2) Your petition must include the five items listed in paragraphs (b)(2)(i) through (b)(2)(v) of this section.

(i) Identification of the specific parameters you propose to monitor.

(ii) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants.

(iii) A discussion of how you will establish the upper and/or lower values for these parameters that will establish the operating limits on these parameters, including a discussion of the averaging periods associated with those parameters for determining compliance.

(iv) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

§60.5180 Do the emission limits, emission standards, and operating limits apply during periods of startup, shutdown, and malfunction?

The emission limits and standards apply at all times and during periods of malfunction. The operating limits apply at all times that sewage sludge is in the combustion chamber (*i.e.*, until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time). For determining compliance with the CO concentration limit using CO CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured CO concentration without correcting for oxygen concentration in averaging with other CO concentrations (corrected to 7 percent O_2) to determine the 24-hour average value.

§60.5181 How do I establish an affirmative defense for exceedance of an emission limit or standard during malfunction?

In response to an action to enforce the numerical emission standards set forth in paragraph §60.5165, you may assert an affirmative defense to a claim for civil penalties for exceedances of emission limits that are caused by malfunction, as defined in §60.2. Appropriate penalties may be assessed however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) To establish the affirmative defense in any action to enforce such a limit, you must timely meet the notification requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that the conditions in paragraphs (a)(1) through (a)(9) of this section are met.

(1) The excess emissions:

(i) Were caused by a sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner, and (ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices, and (iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for, and

(iv) Were not part of a recurring pattern indicative of inadequate design, operation, or maintenance, and

(2) Repairs were made as expeditiously as possible when the applicable emission limits were being exceeded. Off-shift and overtime labor were used, to the extent practicable to make these repairs, and (3) The frequency, amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions, and (4) If the excess emissions resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, and

(5) All possible steps were taken to minimize the impact of the excess emissions on ambient air quality, the environment and human health, and

(6) All emissions monitoring and control systems were kept in operation if at all possible consistent with safety and good air pollution control practices, and

(7) All of the actions in response to the excess emissions were documented

by properly signed, contemporaneous operating logs, and

(8) At all times, the affected facility was operated in a manner consistent with good practices for minimizing emissions, and

(9) A written root cause analysis has been prepared the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the excess emissions resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of excess emissions that were the result of the malfunction.

(b) The owner or operator of the SSI unit experiencing an exceedance of its emission limit(s) during a malfunction, shall notify the Administrator by telephone or facsimile (fax) transmission as soon as possible, but no later than 2 business days after the initial occurrence of the malfunction, if it wishes to avail itself of an affirmative defense to civil penalties for that malfunction. The owner or operator seeking to assert an affirmative defense shall also submit a written report to the Administrator within 45 days of the initial occurrence of the exceedance of the standard in § 60.5165 to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. The owner or operator may seek an extension of this deadline for up to 30 additional days by submitting a written request to the Administrator before the expiration of the 45 day period. Until a request for an extension has been approved by the Administrator, the owner or operator is subject to the requirement to submit such report within 45 days of the initial occurrence of the exceedance.

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

§ 60.5185 How and when do I demonstrate initial compliance with the emission limits and standards?

To demonstrate initial compliance with the emission limits and standards in Table 2 or 3 to this subpart, use the procedures specified in paragraph (a) of this section. In lieu of using the procedures specified in paragraph (a) of this section, you have the option to demonstrate initial compliance using the procedures specified in paragraph (b) of this section for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, lead, and fugitive emissions from ash handling. You must meet the requirements of paragraphs (a) and (b) of this section, as applicable, and paragraphs (c) through (e) of this section, according to the performance testing, monitoring, and calibration requirements in § 60.5220(a) and (b).

(a) Demonstrate initial compliance using the performance test required in § 60.8. You must demonstrate that your SSI unit meets the emission limits and standards specified in Table 2 or 3 to this subpart for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, lead, and fugitive emissions from ash handling using the performance test. The initial performance test must be conducted using the test methods, averaging methods, and minimum sampling volumes or durations specified in Table 2 or 3 to this subpart and according to the testing, monitoring, and calibration requirements specified in § 60.5220(a).

(1) Except as provided in paragraph (e) of this section, you must demonstrate that your SSI unit meets the emission limits and standards specified in Table 2 or 3 to this subpart by your final compliance date (see Table 1 to this subpart).

(2) You may use the results from a performance test conducted within the 2 previous years that was conducted under the same conditions and demonstrated compliance with the emission limits and standards in Table 2 or 3 to this subpart, provided no process changes have been made since you conducted that performance test. However, you must continue to meet the operating limits established during the most recent performance test that demonstrated compliance with the emission limits and standards in Table 2 or 3 to this subpart. The performance

test must have used the test methods specified in Table 2 or 3 to this subpart.

(b) Demonstrate initial compliance using a continuous emissions monitoring system or continuous automated sampling system. The option to use a continuous emissions monitoring system for hydrogen chloride, dioxins/furans, cadmium, or lead takes effect on the date a final performance specification applicable to hydrogen chloride, dioxins/furans, cadmium, or lead is published in the FEDERAL REGISTER. The option to use a continuous automated sampling system for dioxins/furans takes effect on the date a final performance specification for such a continuous automated sampling system is published in the FEDERAL REGISTER. Collect data as specified in §60.5220(b)(6) and use the following procedures:

(1) To demonstrate initial compliance with the emission limits specified in Table 2 or 3 to this subpart for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead, you may substitute the use of a continuous monitoring system in lieu of conducting the initial performance test required in paragraph (a) of this section, as follows:

(i) You may substitute the use of a continuous emissions monitoring system for any pollutant specified in paragraph (b)(1) of this section in lieu of conducting the initial performance test for that pollutant in paragraph (a) of this section. For determining compliance with the carbon monoxide concentration limit using carbon monoxide CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured carbon monoxide concentration without correcting for oxygen concentration in averaging with other carbon monoxide concentrations (corrected to 7 percent oxygen) to determine the 24-hour average value.

(ii) You may substitute the use of a continuous automated sampling system for mercury or dioxins/furans in lieu of conducting the annual mercury or dioxin/furan performance test in paragraph (a) of this section.

(2) If you use a continuous emissions monitoring system to demonstrate compliance with an applicable emission limit in Table 2 or 3 to this subpart, as described in paragraph (b)(1) of this section, you must use the continuous emissions monitoring system and follow the requirements specified in §60.5220(b). You must measure emissions according to §60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen (or carbon dioxide). You must demonstrate initial compliance using a 24-hour block average of these 1-hour arithmetic average emission concentrations, calculated using Equation 19–19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A–7.

(3) If you use a continuous automated sampling system to demonstrate compliance with an applicable emission limit in Table 2 or 3 to this subpart, as described in paragraph (b)(1) of this section, you must:

(i) Use the continuous automated sampling system specified in §60.58b(p) and (q), and measure and calculate average emissions corrected to 7 percent oxygen (or carbon dioxide) according to §60.58b(p) and your monitoring plan.

(A) Use the procedures specified in §60.58b(p) to calculate 24-hour block averages to determine compliance with the mercury emission limit in Table 2 to this subpart.

(B) Use the procedures specified in §60.58b(p) to calculate 2-week block averages to determine compliance with the dioxin/furan (total mass basis or toxic equivalency basis) emission limit in Table 2 to this subpart.

(ii) Comply with the provisions in §60.58b(q) to develop a monitoring plan. For mercury continuous automated sampling systems, you must use Performance Specification 12B of appendix B of part 75 and Procedure 5 of appendix F of this part.

(4) Except as provided in paragraph (e) of this section, you must complete your initial performance evaluations required under your monitoring plan for any continuous emissions monitoring systems and continuous automated sampling systems by your final compliance date (see Table 1 to this subpart). Your performance evaluation

must be conducted using the procedures and acceptance criteria specified in § 60.5200(a)(3).

(c) To demonstrate initial compliance with the dioxins/furans toxic equivalency emission limit in Table 2 or 3 to this subpart, determine dioxins/furans toxic equivalency as follows:

(1) Measure the concentration of each dioxin/furan tetra- through octachlorinated-isomer emitted using EPA Method 23 at 40 CFR part 60, appendix A–7.

(2) Multiply the concentration of each dioxin/furan (tetra- through octachlorinated) isomer by its corresponding toxic equivalency factor specified in Table 5 to this subpart. (3) Sum the products calculated in accordance with paragraph (c)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(d) Submit an initial compliance report, as specified in § 60.5235(b).

(e) If you demonstrate initial compliance using the performance test specified in paragraph (a) of this section, then the provisions of this paragraph (e) apply. If a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure, you must notify the Administrator in writing as specified in § 60.5235(g). You must conduct the initial performance test as soon as practicable after the force majeure occurs. The Administrator will determine whether or not to grant the extension to the initial performance test deadline, and will notify you in writing of approval or disapproval of the request for an extension as soon as practicable. Until an extension of the performance test deadline has been approved by the Administrator, you remain strictly subject to the requirements of this subpart.

§ 60.5190 How do I establish my operating limits?

(a) You must establish the site-specific operating limits specified in paragraphs (b) through (h) of this section or established in § 60.5175, as applicable, during your initial performance tests required in § 60.5185. You must meet the requirements in § 60.5210(d) to confirm these operating limits or re-establishre-establish new operating limits using operating data recorded during any performance tests or performance evaluations required in § 60.5205. You must follow the data measurement and recording frequencies and data averaging times specified in Table 4 to this subpart or as established in § 60.5175, and you must follow the testing, monitoring, and calibration requirements specified in §§ 60.5220 and 60.5225 or established in § 60.5175. You are not required to establish operating limits for the operating parameters listed in Table 4 to this subpart for a control device if you use a continuous monitoring system to demonstrate compliance with the emission limits in Table 2 or 3 to this subpart for the applicable pollutants, as follows:

(1) For a scrubber designed to control emissions of hydrogen chloride or sulfur dioxide, you are not required to establish an operating limit and monitor scrubber liquid flow rate or scrubber liquid pH if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for hydrogen chloride or sulfur dioxide.

(2) For a scrubber designed to control emissions of particulate matter, cadmium, and lead, you are not required to establish an operating limit and monitor pressure drop across the scrubber or scrubber liquid flow rate if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for particulate matter, cadmium, and lead.

(3) For an electrostatic precipitator designed to control emissions of particulate matter, cadmium, and lead, you are not required to establish an operating limit and monitor secondary voltage of the collection plates, secondary amperage of the collection plates, or effluent water flow rate at the outlet of the electrostatic precipitator if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for particulate matter, lead, and cadmium.

(4) For an activated carbon injection system designed to control emissions

of mercury, you are not required to establish an operating limit and monitor sorbent injection rate and carrier gas flow rate (or carrier gas pressure drop) if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for mercury.

(5) For an activated carbon injection system designed to control emissions of dioxins/furans, you are not required to establish an operating limit and monitor sorbent injection rate and carrier gas flow rate (or carrier gas pressure drop) if you use the continuous monitoring system specified in §§ 60.4865(b) and 60.4885(b) to demonstrate compliance with the emission limit for dioxins/furans (total mass basis or toxic equivalency basis).

(b) Minimum pressure drop across each wet scrubber used to meet the particulate matter, lead, and cadmium emission limits in Table 2 or 3 to this subpart, equal to the lowest 4-hour average pressure drop across each such wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter, lead, and cadmium emission limits.

(c) Minimum scrubber liquid flow rate (measured at the inlet to each wet scrubber), equal to the lowest 4-hour average liquid flow rate measured during the most recent performance test demonstrating compliance with all applicable emission limits. (d) Minimum scrubber liquid pH for each wet scrubber used to meet the sulfur dioxide or hydrogen chloride emission limits in Table 2 or 3 to this subpart, equal to the lowest 1-hour average scrubber liquid pH measured during the most recent performance test demonstrating compliance with the sulfur dioxide and hydrogen chloride emission limits.

(e) Minimum combustion chamber operating temperature (or minimum afterburner temperature), equal to the lowest 4-hour average combustion chamber operating temperature (or afterburner temperature) measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(f) Minimum power input to the electrostatic precipitator collection plates, equal to the lowest 4-hour average secondary electric power measured during the most recent performance test demonstrating compliance with the particulate matter, lead, and cadmium emission limits. Power input must be calculated as the product of the secondary voltage and secondary amperage to the electrostatic precipitator collection plates. Both the secondary voltage and secondary amperage must be recorded during the performance test. (g) Minimum effluent water flow rate at the outlet of the electrostatic precipitator, equal to the lowest 4-hour average effluent water flow rate at the outlet of the electrostatic precipitator measured during the most recent performance test demonstrating compliance with the particulate matter, lead, and cadmium emission limits. (h) For activated carbon injection, establish the site-specific operating limits specified in paragraphs (h)(1) through (h)(3) of this section.

(1) Minimum mercury sorbent injection rate, equal to the lowest 4-hour average mercury sorbent injection rate measured during the most recent performance test demonstrating compliance with the mercury emission limit.

(2) Minimum dioxin/furan sorbent injection rate, equal to the lowest 4-hour average dioxin/furan sorbent injection rate measured during the most recent performance test demonstrating compliance with the dioxin/furan (total mass basis or toxic equivalency basis) emission limit.

(3) Minimum carrier gas flow rate or minimum carrier gas pressure drop, as follows:

(i) Minimum carrier gas flow rate, equal to the lowest 4-hour average carrier gas flow rate measured during the most recent performance test demonstrating compliance with the applicable emission limit.

(ii) Minimum carrier gas pressure drop, equal to the lowest 4-hour average carrier gas flow rate measured during the most recent performance test demonstrating compliance with the applicable emission limit.

§ 60.5195 By what date must I conduct the initial air pollution control device inspection and make any necessary repairs?

(a) You must conduct an air pollution control device inspection according to § 60.5220(c) by the final compliance date under the approved state plan, Federal plan, or delegation, as applicable. For air pollution control devices installed after the final compliance date, you must conduct the air pollution control device inspection within 60 days after installation of the control device.

(b) Within 10 operating days following the air pollution control device inspection under paragraph (a) of this section, all necessary repairs must be completed unless you obtain written approval from the Administrator establishing a date whereby all necessary repairs of the SSI unit must be completed.

§ 60.5200 How do I develop a site-specific monitoring plan for my continuous monitoring, bag leak detection, and ash handling systems, and by what date must I conduct an initial performance evaluation?

You must develop and submit to the Administrator for approval a site-specific monitoring plan for each continuous monitoring system required under this subpart, according to the requirements in paragraphs (a) through (c) of this section. This requirement also applies to you if you petition the Administrator for alternative monitoring parameters under § 60.13(i) and paragraph (e) of this section. If you use a continuous automated sampling system to comply with the mercury or dioxin/furan (total mass basis or toxic equivalency basis) emission limits, you must develop your monitoring plan as specified in § 60.58b(q), and you are not required to meet the requirements in paragraphs (a) and (b) of this section. You must also submit a site-specific monitoring plan for your ash handling system, as specified in paragraph (d) of this section. You must submit and update your monitoring plans as specified in paragraphs (f) through (h) of this section.

(a) For each continuous monitoring system, your monitoring plan must address the elements and requirements specified in paragraphs (a)(1) through (a)(8) of this section. You must operate and maintain the continuous monitoring system in continuous operation according to the site-specific monitoring plan.

(1) Installation of the continuous monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device).

(2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer and the data collection and reduction systems.

(3) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations).

(i) For continuous emissions monitoring systems, your performance evaluation and acceptance criteria must include, but is not limited to, the following:

(A) The applicable requirements for continuous emissions monitoring systems specified in § 60.13.

(B) The applicable performance specifications (*e.g.*, relative accuracy tests) in appendix B of this part.

(C) The applicable procedures (*e.g.*, quarterly accuracy determinations and daily calibration drift tests) in appendix F of this part.

(D) A discussion of how the occurrence and duration of out-of-control periods will affect the suitability of CEMS data, where out-of-control has the meaning given in section (a)(7)(i) of this section.

(ii) For continuous parameter monitoring systems, your performance evaluation and acceptance criteria must include, but is not limited to, the following:

(A) If you have an operating limit that requires the use of a flow monitoring system, you must meet the requirements in paragraphs (a)(3)(ii)(A)(*1*) through (*4*) of this section.

(*1*) Install the flow sensor and other necessary equipment in a position that provides a representative flow.

(*2*) Use a flow sensor with a measurement sensitivity of no greater than 2

percent of the expected process flow rate.

(*3*) Minimize the effects of swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(*4*) Conduct a flow monitoring system performance evaluation in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(B) If you have an operating limit that requires the use of a pressure monitoring system, you must meet the requirements in paragraphs (a)(3)(ii)(B)(*1*) through (*6*) of this section.

(*1*) Install the pressure sensor(s) in a position that provides a representative measurement of the pressure (*e.g.*, particulate matter scrubber pressure drop).

(*2*) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(*3*) Use a pressure sensor with a minimum tolerance of 1.27 centimeters of water or a minimum tolerance of 1 percent of the pressure monitoring system operating range, whichever is less.

(*4*) Perform checks at least once each process operating day to ensure pressure measurements are not obstructed (*e.g.*, check for pressure tap pluggage daily).

(*5*) Conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(*6*) If at any time the measured pressure exceeds the manufacturer's specified maximum operating pressure range, conduct a performance evaluation of the pressure monitoring system in accordance with your monitoring plan and confirm that the pressure monitoring system continues to meet the performance requirements in your monitoring plan. Alternatively, install and verify the operation of a new pressure sensor.

(C) If you have an operating limit that requires a pH monitoring system, you must meet the requirements in paragraphs (a)(3)(ii)(C)(*1*) through (*4*) of this section.

(*1*) Install the pH sensor in a position that provides a representative measurement of scrubber effluent pH.

(*2*) Ensure the sample is properly mixed and representative of the fluid to be measured.

(*3*) Conduct a performance evaluation of the pH monitoring system in accordance with your monitoring plan at least once each process operating day.

(*4*) Conduct a performance evaluation (including a two-point calibration with one of the two buffer solutions having a pH within 1 of the operating limit pH level) of the pH monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than quarterly.

(D) If you have an operating limit that requires the use of a temperature measurement device, you must meet the requirements in paragraphs (a)(3)(ii)(D)(*1*) through (*4*) of this section.

(*1*) Install the temperature sensor and other necessary equipment in a position that provides a representative temperature.

(*2*) Use a temperature sensor with a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit), or 1.0 percent of the temperature value, whichever is larger, for a noncryogenic temperature range.

(*3*) Use a temperature sensor with a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit), or 2.5 percent of the temperature value, whichever is larger, for a cryogenic temperature range.

(*4*) Conduct a temperature measurement device performance evaluation at the time of each performance test but no less frequently than annually.

(E) If you have an operating limit that requires a secondary electric power monitoring system for an electrostatic precipitator, you must meet the requirements in paragraphs (a)(3)(ii)(E)(*1*) and (*2*) of this section.

(*1*) Install sensors to measure (secondary) voltage and current to the electrostatic precipitator collection plates.

(*2*) Conduct a performance evaluation of the electric power monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(F) If you have an operating limit that requires the use of a monitoring system to measure sorbent injection rate (*e.g.*, weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (a)(3)(ii)(F)(*1*) and (*2*) of this section.

(*1*) Install the system in a position(s) that provides a representative measurement of the total sorbent injection rate.

(*2*) Conduct a performance evaluation of the sorbent injection rate monitoring system in accordance with your monitoring plan at the time of each performance test but no less frequently than annually.

(4) Ongoing operation and maintenance procedures in accordance with the general requirements of § 60.11(d).

(5) Ongoing data quality assurance procedures in accordance with the general requirements of § 60.13.

(6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 60.7(b), (c), (c)(1), (c)(4), (d), (e), (f) and (g).

(7) Provisions for periods when the continuous monitoring system is out of control, as follows:

(i) A continuous monitoring system is out of control if the conditions of paragraph (a)(7)(i)(A) or (a)(7)(i)(B) of this section are met.

(A) The zero (low-level), mid-level (if applicable), or high-level calibration drift exceeds two times the applicable calibration drift specification in the applicable performance specification or in the relevant standard.

(B) The continuous monitoring system fails a performance test audit (*e.g.*, cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit.

(ii) When the continuous monitoring system is out of control as specified in paragraph (a)(7)(i) of this section, you must take the necessary corrective action and must repeat all necessary tests that indicate that the system is out of control. You must 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 you conduct 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.

(8) Schedule for conducting initial and periodic performance evaluations of your continuous monitoring systems.

(b) If a bag leak detection system is used, your monitoring plan must include a description of the following items:

(1) Installation of the bag leak detection system in accordance with paragraphs (b)(1)(i) and (ii) of this section.

(i) Install the bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (*e.g.*, for a positive pressure fabric filter) of the fabric filter.

(ii) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(2) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established. Use a bag leak detection system equipped with a system that will sound an alarm when the system detects an increase in relative particulate matter emissions over a preset level. The alarm must be located where it is observed readily and any alert is detected and recognized easily by plant operating personnel.

(3) Evaluations of the performance of the bag leak detection system, performed in accordance with your monitoring plan and consistent with the guidance provided in Fabric Filter Bag Leak Detection Guidance, EPA–454/R–98–015, September 1997 (incorporated by reference, see § 60.17).

(4) Operation of the bag leak detection system, including quality assurance procedures.

(5) Maintenance of the bag leak detection system, including a routine maintenance schedule and spare parts inventory list.

(6) Recordkeeping (including record retention) of the bag leak detection system data. Use a bag leak detection system equipped with a device to continuously record the output signal from the sensor. (c) You must conduct an initial performance evaluation of each continuous monitoring system and bag leak detection system, as applicable, in accordance with your monitoring plan and to § 60.13(c). For the purpose of this subpart, the provisions of § 60.13(c) also apply to the bag leak detection system. You must conduct the initial performance evaluation of each continuous monitoring system within 60 days of installation of the monitoring system

(d) You must submit a monitoring plan specifying the ash handling system operating procedures that you will follow to ensure that you meet the fugitive emissions limit specified in Table 2 or 3 to this subpart.

(e) You may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the standards of this subpart, subject to the provisions of paragraphs (e)(1) through (e)(6) of this section.

(1) The Administrator will not approve averaging periods other than those specified in this section, unless you document, using data or information, that the longer averaging period will ensure that emissions do not exceed levels achieved over the duration of three performance test runs.

(2) If the application to use an alternate monitoring requirement is approved, you must continue to use the original monitoring requirement until approval is received to use another monitoring requirement.

(3) You must submit the application for approval of alternate monitoring requirements no later than the notification of performance test. The application must contain the information specified in paragraphs (e)(3)(i) through (e)(3)(iii) of this section:

(i) Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach.

(ii) A description of the proposed alternative monitoring requirement, including the operating parameter to be monitored, the monitoring approach and technique, the averaging period for the limit, and how the limit is to be calculated.

(iii) Data or information documenting that the alternative monitoring requirement would provide equivalent or better assurance of compliance with the relevant emission standard.

(4) The Administrator will notify you of the approval or denial of the application within 90 calendar days after receipt of the original request, or within 60 calendar days of the receipt of any supplementary information, whichever is later. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard. Before disapproving any alternate monitoring application, the Administrator will provide the following:

(i) Notice of the information and findings upon which the intended disapproval is based.

(ii) Notice of opportunity for you to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for you to provide additional supporting information.

(5) You are responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application, nor the Administrator's failure to approve or disapprove the application relieves you of the responsibility to comply with any provision of this subpart.

(6) The Administrator may decide at any time, on a case-by-case basis, that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of this subpart.

(f) You must submit your monitoring plans required in paragraphs (a) and (b) of this section at least 60 days before

your initial performance evaluation of your continuous monitoring system(s).

(g) You must submit your monitoring plan for your ash handling system, as required in paragraph (d) of this section, at least 60 days before your initial compliance test date.

(h) You must update and resubmit your monitoring plan if there are any changes or potential changes in your monitoring procedures or if there is a process change, as defined in § 60.5250.

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.5205 How and when do I demonstrate continuous compliance with the emission limits and standards?

To demonstrate continuous compliance with the emission limits and standards specified in Table 2 or 3 to this subpart, use the procedures specified in paragraph (a) of this section. In lieu of using the procedures specified in paragraph (a) of this section, you have the option to demonstrate initial compliance using the procedures specified in paragraph (b) of this section for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, lead, and fugitive emissions from ash handling. You must meet the requirements of paragraphs (a) and (b) of this section, as applicable, and paragraphs (c) through (e) of this section, according to the performance testing, monitoring, and calibration requirements in § 60.5220(a) and (b). You may also petition the Administrator for alternative monitoring parameters as specified in paragraph (f) of this section.

(a) Demonstrate continuous compliance using a performance test. Except as provided in paragraphs (a)(3) and (e) of this section, following the date that the initial performance test for each pollutant in Table 2 or 3 to this subpart is completed, you must conduct a performance test for each such pollutant on an annual basis (between 11 and 13 calendar months following the previous performance test). The performance test must be conducted using the test methods, averaging methods, and minimum sampling volumes or durations specified in Table 2 or 3 to this subpart and according to the testing, monitoring, and calibration requirements specified in § 60.5220(a).

(1) You may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward. The Administrator may request a repeat performance test at any time.

(2) You must repeat the performance test within 60 days of a process change, as defined in § 60.5250.

(3) Except as specified in paragraphs (a)(1) and (2) of this section, you can conduct performance tests less often for a given pollutant, as specified in paragraphs (a)(3)(i) through (iii) of this section.

(i) You can conduct performance tests less often if your performance tests for the pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit specified in Table 2 or 3 to this subpart, and there are no changes in the operation of the affected source or air pollution control equipment that could increase emissions. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the third year and no more than 37 months after the previous performance test.(ii) If your SSI unit continues to meet the emission limit for the pollutant, you may choose to conduct performance tests for the pollutant every third year if your emissions are at or below 75 percent of the emission limit, and if there are no changes in the operation of the affected source or air pollution control equipment that could increase emissions, but each such performance test must be conducted no more than 37 months after the previous performance test.

(iii) If a performance test shows emissions exceeded 75 percent of the emission limit for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over 2 consecutive years show compliance.

(b) Demonstrate continuous compliance using a continuous emissions monitoring system or continuous automated sampling system. The option to

use a continuous emissions monitoring system for hydrogen chloride, dioxins/furans, cadmium, or lead takes effect on the date a final performance specification applicable to hydrogen chloride, dioxins/furans, cadmium, or lead is published in the FEDERAL REGISTER. The option to use a continuous automated sampling system for dioxins/furans takes effect on the date a final performance specification for such a continuous automated sampling system is published in the FEDERAL REGISTER. Collect data as specified in § 60.5220(b)(6) and use the following procedures:

(1) To demonstrate continuous compliance with the emission limits for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass basis or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead, you may substitute the use of a continuous monitoring system in lieu of conducting the annual performance test required in paragraph (a) of this section, as follows:

(i) You may substitute the use of a continuous emissions monitoring system for any pollutant specified in paragraph (b)(1) of this section in lieu of conducting the annual performance test for that pollutant in paragraph (a) of this section. For determining compliance with the carbon monoxide concentration limit using carbon monoxide CEMS, the correction to 7 percent oxygen does not apply during periods of startup or shutdown. Use the measured carbon monoxide concentration without correcting for oxygen concentration in averaging with other carbon monoxide concentrations (corrected to 7 percent oxygen) to determine the 24-hour average value.

(ii) You may substitute the use of a continuous automated sampling system for mercury or dioxins/furans in lieu of conducting the annual mercury or dioxin/furan performance test in paragraph (a) of this section.

(2) If you use a continuous emissions monitoring system to demonstrate compliance with an applicable emission limit in paragraph (b)(1) of this section, you must use the continuous emissions monitoring system and follow the requirements specified in § 60.5220(b). You must measure emissions according to § 60.13 to calculate 1-hour arithmetic averages, corrected to 7 percent oxygen (or carbon dioxide). You must demonstrate initial compliance using a 24-hour block average of these 1-hour arithmetic average emission concentrations, calculated using Equation 19–19 in section 12.4.1 of Method 19 of 40 CFR part 60, appendix A–7.

(3) If you use a continuous automated sampling system to demonstrate compliance with an applicable emission limit in paragraph (b)(1) of this section, you must:

(i) Use the continuous automated sampling system specified in § 60.58b(p) and (q), and measure and calculate average emissions corrected to 7 percent oxygen (or carbon dioxide) according to § 60.58b(p) and your monitoring plan.

(A) Use the procedures specified in § 60.58b(p) to calculate 24-hour averages to determine compliance with the mercury emission limit in Table 2 to this subpart.

(B) Use the procedures specified in § 60.58b(p) to calculate 2-week averages to determine compliance with the dioxin/furan (total mass basis or toxic equivalency basis) emission limits in Table 2 to this subpart.

(ii) Update your monitoring plan as specified in § 60.4880(e). For mercury continuous automated sampling systems, you must use Performance Specification 12B of appendix B of part 75 and Procedure 5 of appendix F of this part.

(4) Except as provided in paragraph (e) of this section, you must complete your periodic performance evaluations required in your monitoring plan for any continuous emissions monitoring systems and continuous automated sampling systems, according to the schedule specified in your monitoring plan. If you were previously determining compliance by conducting an annual performance test (or according to the less frequent testing for a pollutant as provided in paragraph (a)(3) of this section), you must complete the initial performance evaluation required under your monitoring plan in § 60.5200 for the continuous monitoring system prior to using the continuous

emissions monitoring system to demonstrate compliance or continuous automated sampling system. Your performance evaluation must be conducted using the procedures and acceptance criteria specified in § 60.5200(a)(3).

(c) To demonstrate compliance with the dioxins/furans toxic equivalency emission limit in paragraph (a) or (b) of this section, you must determine dioxins/furans toxic equivalency as follows:

(1) Measure the concentration of each dioxin/furan tetra- through octachlorinated-isomer emitted using Method 23 at 40 CFR part 60, appendix A–7.

(2) For each dioxin/furan (tetra- through octachlorinated) isomer measured in accordance with paragraph (c)(1) of this section, multiply the isomer concentration by its corresponding toxic equivalency factor specified in Table 5 to this subpart.

(3) Sum the products calculated in accordance with paragraph (c)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(d) You must submit an annual compliance report as specified in § 60.5235(c). You must submit a deviation report as specified in § 60.5235(d) for each instance that you did not meet each emission limit in Table 2 to this subpart.

(e) If you demonstrate continuous compliance using a performance test, as specified in paragraph (a) of this section, then the provisions of this paragraph (e) apply. If a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure, you must notify the Administrator in writing as specified in § 60.5235(g). You must conduct the performance test as soon as practicable after the force majeure occurs. The Administrator will determine whether or not to grant the extension to the performance test deadline, and will notify you in writing of approval or disapproval of the request for an extension as soon as practicable. Until an extension of the performance test deadline has been approved by the Administrator, you remain strictly subject to the requirements of this subpart.

(f) After any initial requests in § 60.5200 for alternative monitoring requirements for initial compliance, you may subsequently petition the Administrator for alternative monitoring parameters as specified in §§ 60.13(i) and 60.5200(e).

§ 60.5210 How do I demonstrate continuous compliance with my operating limits?

You must continuously monitor your operating parameters as specified in paragraph (a) of this section and meet the requirements of paragraphs (b) and (c) of this section, according to the monitoring and calibration requirements in § 60.5225. You must confirm and re-establish your operating limits as specified in paragraph (d) of this section.

(a) You must continuously monitor the operating parameters specified in paragraphs (a)(1) and (a)(2) of this section using the continuous monitoring equipment and according to the procedures specified in § 60.5225 or established in § 60.5175. To determine compliance, you must use the data averaging period specified in Table 4 to this subpart (except for alarm time of the baghouse leak detection system) unless a different averaging period is established under § 60.5175.

(1) You must demonstrate that the SSI unit meets the operating limits established according to §§ 60.5175 and 60.5190 and paragraph (d) of this section for each applicable operating parameter.

(2) You must demonstrate that the SSI unit meets the operating limit for bag leak detection systems as follows:

(i) For a bag leak detection system, you must calculate the alarm time as follows:

(A) If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted.

(B) If corrective action is required, each alarm time shall be counted as a minimum of 1 hour.

(C) If you take longer than 1 hour to initiate corrective action, each alarm time (*i.e.*, time that the alarm sounds) is counted as the actual amount of time taken by you to initiate corrective action.

(ii) Your maximum alarm time is equal to 5 percent of the operating time during a 6-month period, as specified in § 60.5170(c).

(b) Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. You must submit the deviation report specified in § 60.5235(d) for each instance that you did not meet one of your operating limits established under this subpart.

(c) You must submit the annual compliance report specified in § 60.5235(c) to demonstrate continuous compliance.

(d) You must confirm your operating limits according to paragraph (d)(1) of this section or re-establish operating limits according to paragraph (d)(2) of this section. Your operating limits must be established so as to assure ongoing compliance with the emission limits. These requirements also apply to your operating requirements in your fugitive emissions monitoring plan specified in § 60.5170(d).

(1) Your operating limits must be based on operating data recorded during any performance test required in § 60.5205(a) or any performance evaluation required in § 60.5205(b)(4).

(2) You may conduct a repeat performance test at any time to establish new values for the operating limits to apply from that point forward.

§ 60.5215 By what date must I conduct annual air pollution control device inspections and make any necessary repairs?

(a) You must conduct an annual inspection of each air pollution control device used to comply with the emission limits, according to § 60.5220(c), no later than 12 months following the previous annual air pollution control device inspection.

(b) Within 10 operating days following an air pollution control device inspection, all necessary repairs must be completed unless you obtain written approval from the Administrator establishing a date whereby all necessary repairs of the affected SSI unit must be completed.

MODEL RULE—PERFORMANCE TESTING, MONITORING, AND CALIBRATION REQUIREMENTS

§ 60.5220 What are the performance testing, monitoring, and calibration requirements for compliance with the emission limits and standards?

You must meet, as applicable, the performance testing requirements specified in paragraph (a) of this section, the monitoring requirements specified in paragraph (b) of this section, the air pollution control device inspections requirements specified in paragraph (c) of this section, and the bypass stack provisions specified in paragraph (d) of this section.

(a) *Performance testing requirements.*

(1) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations, as specified in § 60.8(c). Emissions in excess of the emission limits or standards during periods of startup, shutdown, and malfunction are considered deviations from the applicable emission limits or standards.

(2) You must document that the dry sludge burned during the performance test is representative of the sludge burned under normal operating conditions by:

(i) Maintaining a log of the quantity of sewage sludge burned during the performance test by continuously monitoring and recording the average hourly rate that sewage sludge is fed to the incinerator.

(ii) Maintaining a log of the moisture content of the sewage sludge burned during the performance test by taking grab samples of the sewage sludge fed to the incinerator for each 8 hour period that testing is conducted.

(3) All performance tests must be conducted using the test methods, minimum sampling volume, observation period, and averaging method specified in Table 2 or 3 to this subpart.

(4) Method 1 at 40 CFR part 60, appendix A must be used to select the sampling location and number of traverse points.

(5) Method 3A or 3B at 40 CFR part 60, appendix A–2 must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B at 40 CFR part 60, appendix A–2 must be used simultaneously with each method.

(6) All pollutant concentrations must be adjusted to 7 percent oxygen using Equation 1 of this section:

$$C_{adj} = C_{meas}(20.9-7)/(20.9-\%O_2) \quad \text{(Eq. 1)}$$

Where:

C_{adj} = Pollutant concentration adjusted to 7 percent oxygen.

C_{meas} = Pollutant concentration measured on a dry basis.

(20.9 − 7) = 20.9 percent oxygen − 7 percent oxygen (defined oxygen correction basis).

20.9 = Oxygen concentration in air, percent.

$\%O_2$ = Oxygen concentration measured on a dry basis, percent.

(7) Performance tests must be conducted and data reduced in accordance with the test methods and procedures contained in this subpart unless the Administrator does one of the following.

(i) Specifies or approves, in specific cases, the use of a method with minor changes in methodology.

(ii) Approves the use of an equivalent method.

(iii) 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.

(iv) Waives the requirement for performance tests because you have demonstrated by other means to the Administrator's satisfaction that the affected SSI unit is in compliance with the standard.

(v) Approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph is construed to abrogate the Administrator's authority to require testing under section 114 of the Clean Air Act.

(8) You must provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, *etc.*) in conducting the scheduled performance test, you must notify the Administrator as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator by mutual agreement.

(9) You must provide, or cause to be provided, performance testing facilities as follows:

(i) Sampling ports adequate for the test methods applicable to the SSI unit, as follows:

(A) 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.

(B) Providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.

(ii) Safe sampling platform(s).

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

(iv) Utilities for sampling and testing equipment.

(10) Unless otherwise specified in this subpart, each performance test must consist of three separate runs using the applicable test method. Each run must be conducted for the time and under the conditions specified in the applicable standard. Compliance with each emission limit must be determined by calculating the arithmetic mean of the three runs. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond your control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

(11) During each test run specified in paragraph (a)(1) of this section, you must operate your sewage sludge incinerator at a minimum of 85 percent of your maximum permitted capacity.

(b) *Continuous monitor requirements.* You must meet the following requirements, as applicable, when using a continuous monitoring system to demonstrate compliance with the emission limits in Table 2 or 3 to this subpart. The option to use a continuous emissions monitoring system for hydrogen chloride, dioxins/furans, cadmium, or lead takes effect on the date a final performance specification applicable to hydrogen chloride, dioxins/furans, cadmium, or lead is published in the FEDERAL REGISTER. If you elect to use a continuous emissions monitoring system instead of conducting annual performance testing, you must meet the requirements of paragraphs (b)(1) through (b)(6) of this section. If you elect to use a continuous automated sampling system instead of conducting annual performance testing, you must meet the requirements of paragraph (b)(7) of this section. The option to use a continuous automated sampling system for dioxins/furans takes effect on the date a final performance specification for such a continuous automated sampling system is published in the FEDERAL REGISTER.

(1) You must notify the Administrator 1 month before starting use of the continuous emissions monitoring system.

(2) You must notify the Administrator 1 month before stopping use of the continuous emissions monitoring system, in which case you must also conduct a performance test within prior to ceasing operation of the system.

(3) You must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the emissions to the atmosphere in accordance with the following:

(i) Section 60.13 of subpart A of this part.

(ii) The following performance specifications of appendix B of this part, as applicable:

(A) For particulate matter, Performance Specification 11 of appendix B of this part.

(B) For hydrogen chloride, Performance Specification 15 of appendix B of this part.

(C) For carbon monoxide, Performance Specification 4B of appendix B of this part with spans appropriate to the applicable emission limit.

(D) [Reserved]

(E) For mercury, Performance Specification 12A of appendix B of this part.

(F) For nitrogen oxides, Performance Specification 2 of appendix B of this part.

(G) For sulfur dioxide, Performance Specification 2 of appendix B of this part.

(iii) For continuous emissions monitoring systems, the quality assurance procedures (*e.g.*, quarterly accuracy determinations and daily calibration drift tests) of appendix F of this part specified in paragraphs (b)(3)(iii)(A) through (b)(3)(iii)(G) of this section. For each pollutant, the span value of the continuous emissions monitoring system is two times the applicable emission limit, expressed as a concentration.

(A) For particulate matter, Procedure 2 in appendix F of this part.

(B) For hydrogen chloride, Procedure 1 in appendix F of this part except that the Relative Accuracy Test Audit requirements of Procedure 1 shall be replaced with the validation requirements and criteria of sections 11.1.1 and 12.0 of Performance Specification 15 of appendix B of this part.

(C) For carbon monoxide, Procedure 1 in appendix F of this part.

(D) [Reserved]

(E) For mercury, Procedures 5 in appendix F of this part.

(F) For nitrogen oxides, Procedure 1 in appendix F of this part.

(G) For sulfur dioxide, Procedure 1 in appendix F of this part.

(iv) If your monitoring system has a malfunction or out-of-control period, you must complete repairs and resume operation of your monitoring system as expeditiously as possible.

(4) During each relative accuracy test run of the continuous emissions monitoring system using the performance specifications in paragraph (b)(3)(ii) of this section, emission data for each regulated pollutant and oxygen (or carbon dioxide as established in (b)(5) of

this section) must be collected concurrently (or within a 30- to 60-minute period) by both the continuous emissions monitoring systems and the test methods specified in paragraph (b)(4)(i) through (b)(4)(viii) of this section. Relative accuracy testing must be at representative operating conditions while the SSI unit is charging sewage sludge.

(i) For particulate matter, Method 5 at 40 CFR part 60, appendix A–3 or Method 26A or 29 at 40 CFR part 60, appendix A–8 shall be used.

(ii) For hydrogen chloride, Method 26 or 26A at 40 CFR part 60, appendix A–8, shall be used, as specified in Tables 1 and 2 to this subpart.

(iii) For carbon monoxide, Method 10, 10A, or 10B at 40 CFR part 60, appendix A–4, shall be used.

(iv) For dioxins/furans, Method 23 at 40 CFR part 60, appendix A–7, shall be used.

(v) For mercury, cadmium, and lead, Method 29 at 40 CFR part 60, appendix A–8, shall be used. Alternatively for mercury, either Method 30B at 40 CFR part 60, appendix A–8 or ASTM D6784–02 (Reapproved 2008) (incorporated by reference, see § 60.17), may be used.

(vi) For nitrogen oxides, Method 7 or 7E at 40 CFR part 60, appendix A–4, shall be used.

(vii) For sulfur dioxide, Method 6 or 6C at 40 CFR part 60, appendix A–4, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17) must be used. For sources that have actual inlet emissions less than 100 parts per million dry volume, the relative accuracy criterion for the inlet of the sulfur dioxide continuous emissions monitoring system should be no greater than 20 percent of the mean value of the method test data in terms of the units of the emission standard, or 5 parts per million dry volume absolute value of the mean difference between the method and the continuous emissions monitoring system, whichever is greater.

(viii) For oxygen (or carbon dioxide as established in (b)(5) of this section), Method 3A or 3B at 40 CFR part 60, appendix A–2, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, see § 60.17), as applicable, must be used.

(5) You may request that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels must be established during the initial performance test according to the procedures and methods specified in paragraphs (b)(5)(i) through (b)(5)(iv) of this section. This relationship may be re-established during subsequent performance tests.

(i) The fuel factor equation in Method 3B at 40 CFR part 60, appendix A–2 must be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Method 3A or 3B at 50 CFR part 60, appendix A–2, or as an alternative ANSI/ASME PTC 19.10–1981 (incorporated by reference, *see* § 60.17), as applicable, must be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

(ii) Samples must be taken for at least 30 minutes in each hour.

(iii) Each sample must represent a 1-hour average.

(iv) A minimum of three runs must be performed.

(6) You must operate the continuous monitoring system and collect data with the continuous monitoring system as follows:

(i) You must collect data using the continuous monitoring system at all times the affected SSI unit is operating and at the intervals specified in paragraph (b)(6)(ii) of this section, except for periods of monitoring system malfunctions that occur during periods specified in § 60.5200(a)(7)(i), repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments). Any such periods that you do not collect data using the continuous monitoring system constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(ii) You must collect continuous emissions monitoring system data in accordance with § 60.13(e)(2).

(iii) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities must not be included in calculations used to report emissions or operating levels. Any such periods must be reported in a deviation report.

(iv) Any data collected during periods when the monitoring system is out of control as specified in § 60.4880(a)(7)(i), repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or control activities conducted during out-of-control periods must not be included in calculations used to report emissions or operating levels. Any such periods that do not coincide with a monitoring system malfunction as defined in § 60.5250, constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(v) You must use all the data collected during all periods except those periods specified in paragraphs (b)(6)(iii) and (b)(6)(iv) of this section in assessing the operation of the control device and associated control system.

(7) If you elect to use a continuous automated sampling system instead of conducting annual performance testing, you must:

(i) Install, calibrate, maintain, and operate a continuous automated sampling system according to the site-specific monitoring plan developed in § 60.58b(p)(1) through (p)(6), (p)(9), (p)(10), and (q).

(ii) Collect data according to § 60.58b(p)(5) and paragraph (b)(6) of this section.

(c) *Air pollution control device inspections.* You must conduct air pollution control device inspections that include, at a minimum, the following:

(1) Inspect air pollution control device(s) for proper operation.

(2) Generally observe that the equipment is maintained in good operating condition.

(3) Develop a site-specific monitoring plan according to the requirements in § 60.5200. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 60.13(i). (d) *Bypass stack.* Use of the bypass stack at any time that sewage sludge is being charged to the SSI unit is an emissions standards deviation for all pollutants listed in Table 2 or 3 to this subpart. The use of the bypass stack during a performance test invalidates the performance test.

§ 60.5225 What are the monitoring and calibration requirements for compliance with my operating limits?

(a) You must install, operate, calibrate, and maintain the continuous parameter monitoring systems according to the requirements in paragraphs (a)(1) and (2) of this section.

(1) Meet the following general requirements for flow, pressure, pH, and operating temperature measurement devices:

(i) You must collect data using the continuous monitoring system at all times the affected SSI unit is operating and at the intervals specified in paragraph (a)(1)(ii) of this section, except for periods of monitoring system malfunctions that occur during periods specified defined in § 60.5200(a)(7)(i), repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments). Any such periods that you do not collect data using the continuous monitoring system constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(ii) You must collect continuous parameter monitoring system data in accordance with § 60.13(e)(2).

(iii) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities must not be included in calculations used to report emissions or operating levels. Any such periods must be reported in your annual deviation report.

(iv) Any data collected during periods when the monitoring system is out of control as specified in § 60.5200(a)(7)(i) must not be included in calculations used to report emissions or operating

levels. Any such periods that do not coincide with a monitoring system malfunction, as defined in § 60.5250, constitute a deviation from the monitoring requirements and must be reported in a deviation report.

(v) You must use all the data collected during all periods except those periods specified in paragraphs (a)(1)(iii) and (a)(1)(iv) of this section in assessing the operation of the control device and associated control system.

(vi) Record the results of each inspection, calibration, and validation check.

(2) Operate and maintain your continuous monitoring system according to your monitoring plan required under § 60.4880. Additionally:

(i) For carrier gas flow rate monitors (for activated carbon injection), during the performance test conducted pursuant to § 60.4885, you must demonstrate that the system is maintained within ±5 percent accuracy, according to the procedures in appendix A to part 75 of this chapter.

(ii) For carrier gas pressure drop monitors (for activated carbon injection), during the performance test conducted pursuant to § 60.4885, you must demonstrate that the system is maintained within ±5 percent accuracy.

(b) You must operate and maintain your bag leak detection system in continuous operation according to your monitoring plan required under § 60.4880. Additionally:

(1) For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a bag leak detection system must be installed in each baghouse compartment or cell.

(2) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(3) You must initiate procedures to determine the cause of every alarm within 8 hours of the alarm, and you must alleviate the cause of the alarm within 24 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in particulate matter 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 fabric filter 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 matter emissions.

(c) You must operate and maintain the continuous parameter monitoring systems specified in paragraphs (a) and (b) of this section in continuous operation according to your monitoring plan required under § 60.4880.

(d) If your SSI unit has a bypass stack, you must install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.

MODEL RULE—RECORDKEEPING AND REPORTING

§ 60.5230 What records must I keep?

You must maintain the items (as applicable) specified in paragraphs (a) through (n) of this section for a period of at least 5 years. All records must be available on site in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

(a) *Date*. Calendar date of each record.

(b) *Increments of progress*. Copies of the final control plan and any additional notifications, reported under § 60.5235.

(c) *Operator Training*. Documentation of the operator training procedures and records specified in paragraphs (c)(1) through (c)(4) of this section. You must make available and readily accessible at the facility at all times for all SSI unit operators the documentation specified in paragraph (c)(1) of this section.

(1) Documentation of the following operator training procedures and information:

(i) Summary of the applicable standards under this subpart.

(ii) Procedures for receiving, handling, and feeding sewage sludge.

(iii) Incinerator startup, shutdown, and malfunction preventative and corrective procedures.

(iv) Procedures for maintaining proper combustion air supply levels.

(v) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(vi) Monitoring procedures for demonstrating compliance with the incinerator operating limits.

(vii) Reporting and recordkeeping procedures.

(viii) Procedures for handling ash.

(ix) A list of the materials burned during the performance test, if in addition to sewage sludge.

(x) For each qualified operator and other plant personnel who may operate the unit according to the provisions of § 60.5155(a), the phone and/or pager number at which they can be reached during operating hours.

(2) Records showing the names of SSI unit operators and other plant personnel who may operate the unit according to the provisions of § 60.5155(a), as follows:

(i) Records showing the names of SSI unit operators and other plant personnel who have completed review of the information in paragraph (c)(1) of this section as required by § 60.5160(b), including the date of the initial review and all subsequent annual reviews.

(ii) Records showing the names of the SSI operators who have completed the operator training requirements under § 60.5130, met the criteria for qualification under § 60.5140, and maintained or renewed their qualification under § 60.5145 or § 60.5150. Records must include documentation of training, including the dates of their initial qualification and all subsequent renewals of such qualifications.

(3) Records showing the periods when no qualified operators were accessible for more than 8 hours, but less than 2 weeks, as required in § 60.5155(a).

(4) Records showing the periods when no qualified operators were accessible for 2 weeks or more along with copies of reports submitted as required in § 60.5155(b).

(d) *Air pollution control device inspections.* Records of the results of initial and annual air pollution control device inspections conducted as specified in §§ 60.5195 and 60.5220(c), including any required maintenance and any repairs not completed within 10 days of an inspection or the timeframe established by the Administrator.

(e) *Performance test reports.*

(1) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable.

(2) Retain a copy of the complete performance test report, including calculations.

(3) Keep a record of the hourly dry sludge feed rate measured during performance test runs as specified in § 60.5220(a)(2)(i).

(4) Keep any necessary records to demonstrate that the performance test was conducted under conditions representative of normal operations, including a record of the moisture content measured as required in § 60.5220(a)(2)(ii) for each grab sample taken of the sewage sludge burned during the performance test.

(f) *Continuous monitoring data.* Records of the following data, as applicable:

(1) For continuous emissions monitoring systems, all 1-hour average concentrations of particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans total mass basis, mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead emissions.

(2) For continuous automated sampling systems, all average concentrations measured for mercury and dioxins/furans total mass basis at the frequencies specified in your monitoring plan.

(3) For continuous parameter monitoring systems:

(i) All 1-hour average values recorded for the following operating parameters, as applicable:

(A) Combustion chamber operating temperature (or afterburner temperature).

(B) If a wet scrubber is used to comply with the rule, pressure drop across each wet scrubber system and liquid flow rate to each wet scrubber used to comply with the emission limit in Table 2 or 3 to this subpart for particulate matter, cadmium, or lead, and scrubber liquid flow rate and scrubber liquid pH for each wet scrubber used to comply with an emission limit in Table 2 or 3 to this subpart for sulfur dioxide or hydrogen chloride.

(C) If an electrostatic precipitator is used to comply with the rule, secondary voltage of the electrostatic precipitator collection plates and secondary amperage of the electrostatic precipitator collection plates, and effluent water flow rate at the outlet of the wet electrostatic precipitator.

(D) If activated carbon injection is used to comply with the rule, sorbent flow rate and carrier gas flow rate or pressure drop, as applicable.

(ii) All daily average values recorded for the feed rate and moisture content of the sewage sludge fed to the sewage sludge incinerator, monitored and calculated as specified in § 60.5170(f).

(iii) If a fabric filter is used to comply with the rule, the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in § 60.5210.

(iv) For other control devices for which you must establish operating limits under § 60.5175, you must maintain data collected for all operating parameters used to determine compliance with the operating limits, at the frequencies specified in your monitoring plan.

(g) *Other records for continuous monitoring systems.* You must keep the following records, as applicable:

(1) Keep records of any notifications to the Administrator in § 60.4915(h)(1) of starting or stopping use of a continuous monitoring system for determining compliance with any emissions limit.

(2) Keep records of any requests under § 60.5220(b)(5) that compliance with the emission limits be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen.

(3) If activated carbon injection is used to comply with the rule, the type of sorbent used and any changes in the type of sorbent used.

(h) *Deviation Reports.* Records of any deviation reports submitted under § 60.5235(e) and (f).

(i) *Equipment specifications and operation and maintenance requirements.* Equipment specifications and related operation and maintenance requirements received from vendors for the incinerator, emission controls, and monitoring equipment.

(j) *Inspections, calibrations, and validation checks of monitoring devices.* Records of inspections, calibration, and validation checks of any monitoring devices as required under §§ 60.5220 and 60.5225.

(k) *Monitoring plan and performance evaluations for continuous monitoring systems.* Records of the monitoring plans required under § 60.5200, and records of performance evaluations required under § 60.5205(b)(5).(l) *Less frequent testing.* If, consistent with 60.5205(a)(3), you elect to conduct performance tests less frequently than annually, you must keep annual records that document that your emissions in the two previous consecutive years were at or below 75 percent of the applicable emission limit in Table 1 or 2 to this subpart, and document that there were no changes in source operations or air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past 2 years.

(m) *Use of bypass stack.* Records indicating use of the bypass stack, including dates, times, and durations as required under § 60.5225(d).

(n) If a malfunction occurs, you must keep a record of the information submitted in your annual report in § 60.5235(c)(16).

§ 60.5235 What reports must I submit?

You must submit the reports specified in paragraphs (a) through (i) of this section. See Table 6 to this subpart for a summary of these reports.

(a) *Increments of progress report.* If you plan to achieve compliance more than 1 year following the effective date of state plan approval, you must submit the following reports, as applicable:

(1) A final control plan as specified in §§ 60.5085(a) and 60.5110.

(2) You must submit your notification of achievement of increments of progress no later than 10 business days after the compliance date for the increment as specified in §§ 60.5095 and 60.5100.

(3) If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment, as specified in § 60.5105.

(4) If you plan to close your SSI unit rather than comply with the state plan, submit a closure notification as specified in § 60.5125.

(b) *Initial compliance report.* You must submit the following information no later than 60 days following the initial performance test.

(1) Company name, physical address, and mailing address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report.

(4) The complete test report for the initial performance test results obtained by using the test methods specified in Table 2 or 3 to this subpart.

(5) If an initial performance evaluation of a continuous monitoring system was conducted, the results of that initial performance evaluation.

(6) The values for the site-specific operating limits established pursuant to §§ 60.5170 and 60.5175 and the calculations and methods, as applicable, used to establish each operating limit.

(7) If you are using a fabric filter to comply with the emission limits, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required by § 60.5170(b).

(8) The results of the initial air pollution control device inspection required in § 60.5195, including a description of repairs.

(9) The site-specific monitoring plan required under § 60.5200, at least 60 days before your initial performance evaluation of your continuous monitoring system.

(10) The site-specific monitoring plan for your ash handling system required under § 60.5200, at least 60 days before your initial performance test to demonstrate compliance with your fugitive ash emission limit.

(c) *Annual compliance report.* You must submit an annual compliance report that includes the items listed in paragraphs (c)(1) through (c)(16) of this section for the reporting period specified in paragraph (c)(3) of this section. You must submit your first annual compliance report no later than 12 months following the submission of the initial compliance report in paragraph (b) of this section. You must submit subsequent annual compliance reports no more than 12 months following the previous annual compliance report. (You may be required to submit these reports (or additional compliance information) more frequently by the title V operating permit required in § 60.5240.)

(1) Company name, physical address, and mailing address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If a performance test was conducted during the reporting period, the results of that performance test.

(i) If operating limits were established during the performance test, include the value for each operating limit and, as applicable, the method used to establish each operating limit, including calculations.

(ii) If activated carbon is used during the performance test, include the type of activated carbon used.

(5) For each pollutant and operating parameter recorded using a continuous monitoring system, the highest average value and lowest average value recorded during the reporting period, as follows:

(i) For continuous emission monitoring systems and continuous automated sampling systems, report the highest and lowest 24-hour average emission value.

(ii) For continuous parameter monitoring systems, report the following values:

(A) For all operating parameters except scrubber liquid pH, the highest and lowest 12-hour average values.

(B) For scrubber liquid pH, the highest and lowest 3-hour average values.

(6) If there are no deviations during the reporting period from any emission limit, emission standard, or operating limit that applies to you, a statement that there were no deviations from the emission limits, emission standard, or operating limits.

(7) Information for bag leak detection systems recorded under § 60.5230(f)(3)(iii).

(8) If a performance evaluation of a continuous monitoring system was conducted, the results of that performance evaluation. If new operating limits were established during the performance evaluation, include your calculations for establishing those operating limits.

(9) If you elect to conduct performance tests less frequently as allowed in § 60.5205(a)(3) and did not conduct a performance test during the reporting period, you must include the dates of the last two performance tests, a comparison of the emission level you achieved in the last two performance tests to the 75 percent emission limit threshold specified in § 60.5205(a)(3), and a statement as to whether there have been any process changes and whether the process change resulted in an increase in emissions.

(10) Documentation of periods when all qualified sewage sludge incineration unit operators were unavailable for more than 8 hours, but less than 2 weeks.

(11) Results of annual air pollution control device inspections recorded under § 60.5230(d) for the reporting period, including a description of repairs.

(12) If there were no periods during the reporting period when your continuous monitoring systems had a malfunction, a statement that there were no periods during which your continuous monitoring systems had a malfunction.

(13) If there were no periods during the reporting period when a continuous monitoring system was out of control, a statement that there were no periods during which your continuous monitoring systems were out of control.

(14) If there were no operator training deviations, a statement that there were no such deviations during the reporting period.

(15) If you did not make revisions to your site-specific monitoring plan during the reporting period, a statement that you did not make any revisions to your site-specific monitoring plan during the reporting period. If you made revisions to your site-specific monitoring plan during the reporting period, a copy of the revised plan.

(16) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction that occurred during the reporting period and that caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 60.11(d), including actions taken to correct a malfunction.

(d) *Deviation reports.*

(1) You must submit a deviation report if:

(i) Any recorded operating parameter level, based on the averaging time specified in Table 4 to this subpart, is above the maximum operating limit or below the minimum operating limit established under this subpart.

(ii) The bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period.

(iii) Any recorded 24-hour block average emissions level is above the emission limit, if a continuous monitoring system is used to comply with an emission limit.

(iv) There are visible emissions of combustion ash from an ash conveying system for more than 5 percent of the hourly observation period.

(v) A performance test was conducted that deviated from any emission limit in Table 2 or 3 to this subpart.

(vi) A continuous monitoring system was out of control.

(vii) You had a malfunction (*e.g.*, continuous monitoring system malfunction) that caused or may have caused any applicable emission limit to be exceeded.

(2) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

(3) For each deviation where you are using a continuous monitoring system to comply with an associated emission limit or operating limit, report the items described in paragraphs (d)(3)(i) through (d)(3)(viii) of this section.

(i) Company name, physical address, and mailing address.

(ii) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(iii) The calendar dates and times your unit deviated from the emission limits, emission standards, or operating limits requirements.

(iv) The averaged and recorded data for those dates.

(v) Duration and cause of each deviation from the following:

(A) Emission limits, emission standards, operating limits, and your corrective actions.

(B) Bypass events and your corrective actions.

(vi) Dates, times, and causes for monitor downtime incidents.

(vii) A copy of the operating parameter monitoring data during each deviation and any test report that documents the emission levels.

(viii) If there were periods during which the continuous monitoring system malfunctioned or was out of control, you must include the following information for each deviation from an emission limit or operating limit:

(A) The date and time that each malfunction started and stopped.

(B) The date, time, and duration that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(C) The date, time, and duration that each continuous monitoring system was out of control, including start and end dates and hours and descriptions of corrective actions taken.

(D) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction, during a period when the system as out of control, or during another period.

(E) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(F) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(G) A summary of the total duration of continuous monitoring system downtime during the reporting period, and the total duration of continuous monitoring system downtime as a percent of the total operating time of the SSI unit at which the continuous monitoring system downtime occurred during that reporting period.

(H) An identification of each parameter and pollutant that was monitored at the SSI unit.

(I) A brief description of the SSI unit.

(J) A brief description of the continuous monitoring system.

(K) The date of the latest continuous monitoring system certification or audit.

(L) A description of any changes in continuous monitoring system, processes, or controls since the last reporting period.

(4) For each deviation where you are not using a continuous monitoring system to comply with the associated emission limit or operating limit, report the following items:.

(i) Company name, physical address, and mailing address.

(ii) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(iii) The total operating time of each affected source during the reporting period.

(iv) The calendar dates and times your unit deviated from the emission limits, emission standards, or operating limits requirements.

(v) The averaged and recorded data for those dates.

(vi) Duration and cause of each deviation from the following:

(A) Emission limits, emission standards, operating limits, and your corrective actions.

(B) Bypass events and your corrective actions.

(vii) A copy of any performance test report that showed a deviation from the emission limits or standards.

(viii) A brief description of any malfunction reported in paragraph (d)(1)(vii) of this section, including a description of actions taken during the malfunction to minimize emissions in accordance with § 60.11(d) and to correct the malfunction.

(e) *Qualified operator deviation.*

(1) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (e)(1)(i) and (e)(1)(ii) of this section.

(i) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (e)(1)(i)(A) through (e)(1)(i)(C) of this section.

(A) A statement of what caused the deviation.

(B) A description of actions taken to ensure that a qualified operator is accessible.

(C) The date when you anticipate that a qualified operator will be available.

(ii) Submit a status report to the Administrator every 4 weeks that includes the three items in paragraphs (e)(1)(ii)(A) through (e)(1)(ii)(C) of this section.

(A) A description of actions taken to ensure that a qualified operator is accessible.

(B) The date when you anticipate that a qualified operator will be accessible.

(C) Request for approval from the Administrator to continue operation of the SSI unit.

(2) If your unit was shut down by the Administrator, under the provisions of § 60.5155(b)(2)(i), due to a failure to provide an accessible qualified operator, you must notify the Administrator within five days of meeting § 60.5155(b)(2)(ii) that you are resuming operation.

(f) *Notification of a force majeure.* If a force majeure is about to occur, occurs, or has occurred for which you intend to assert a claim of force majeure:

(1) You must notify the Administrator, in writing as soon as practicable following the date you first knew, or through due diligence, should have known that the event may cause or caused a delay in conducting a performance test beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification must occur as soon as practicable.

(2) You must provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in conducting the performance test beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which you propose to conduct the performance test.

(g) *Other notifications and reports required.* You must submit other notifications as provided by § 60.7 and as follows:

(1) You must notify the Administrator 1 month before starting or stopping use of a continuous monitoring system for determining compliance with any emission limit.

(2) You must notify the Administrator at least 30 days prior to any performance test conducted to comply with the provisions of this subpart, to afford the Administrator the opportunity to have an observer present.

(3) As specified in § 60.5220(a)(8), you must notify the Administrator at least 7 days prior to the date of a rescheduled performance test for which notification was previously made in paragraph (g)(2) of this section.

(h) *Report submission form.*

(1) Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

(2) As of January 1, 2012 and within 60 days after the date of completing each performance test, as defined in § 63.2, conducted to demonstrate compliance

with this subpart, you must submit relative accuracy test audit (*i.e.*, reference method) data and performance test (*i.e.*, compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (*see http://www.epa.gov/ttn/chief/ert/ert_tool.html/*) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

(i) *Changing report dates.* If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

MODEL RULE—TITLE V OPERATING PERMITS

§ 60.5240 Am I required to apply for and obtain a Title V operating permit for my existing SSI unit?

Yes, if you are subject to an applicable EPA-approved and effective CAA section 111(d)/129 state or tribal plan or an applicable and effective Federal plan, you are required to apply for and obtain a Title V operating permit for your existing SSI unit unless you meet the relevant requirements for an exemption specified in § 60.5065.

§ 60.5245 When must I submit a title V permit application for my existing SSI unit?

(a) If your existing SSI unit is not subject to an earlier permit application deadline, a complete title V permit application must be submitted on or before the earlier of the dates specified in paragraphs (a)(1) through (a)(3) of this section. (See sections 129 (e), 503(c), 503(d), and 502(a) of the Clean Air Act and 40 CFR 70.5(a)(1)(i) and 40 CFR 71.5(a)(1)(i)).

(1) 12 months after the effective date of any applicable EPA-approved Clean Air Act section 111(d)/129 state or tribal plan.

(2) 12 months after the effective date of any applicable Federal plan.

(3) March 21, 2014.

(b) For any existing unit not subject to an earlier permit application deadline, the application deadline of 36 months after the promulgation of this subpart applies regardless of whether or when any applicable Federal plan is effective, or whether or when any applicable Clean Air Act section 111(d)/129 state or tribal plan is approved by EPA and becomes effective.

(c) If your existing unit is subject to title V as a result of some triggering requirement(s) other than those specified in paragraphs (a) and (b) of this section (for example, a unit may be a major source or part of a major source), then your unit may be required to apply for a title V permit prior to the deadlines specified in paragraphs (a) and (b). If more than one requirement triggers a source's obligation to apply for a title V permit, the 12-month timeframe for filing a title V permit application is triggered by the requirement which first causes the source to be subject to title V. (See section 503(c) of the Clean Air Act and 40 CFR 70.3(a) and (b), 40 CFR 70.5(a)(1)(i), 40 CFR 71.3(a) and (b), and 40 CFR 71.5(a)(1)(i).)

(d) A ''complete'' title V permit application is one that has been determined or deemed complete by the relevant permitting authority under section 503(d) of the Clean Air Act and 40 CFR 70.5(a)(2) or 40 CFR 71.5(a)(2). You must submit a complete permit application by the relevant application deadline in order to operate after this date in compliance with Federal law. (*See* sections 503(d) and 502(a) of the Clean Air Act and 40 CFR 70.7(b) and 40 CFR 71.7(b).)

MODEL RULE-DEFINITIONS

§ 60.5250 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and § 60.2.

Administrator means:

(1) For units covered by the Federal plan, the Administrator of the EPA or his/her authorized representative.

(2) For units covered by an approved state plan, the director of the state air pollution control agency or his/her authorized representative.

Affected source means a sewage sludge incineration unit as defined in § 60.5250.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Auxiliary fuel means natural gas, liquefied petroleum gas, fuel oil, or diesel fuel.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (*i.e.*, baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Continuous automated sampling system means the total equipment and procedures for automated sample collection and sample recovery/analysis to determine a pollutant concentration or emission rate by collecting a single integrated sample(s) or multiple integrated sample(s) of the pollutant (or diluent gas) for subsequent on- or off-site analysis; integrated sample(s) collected are representative of the emissions for the sample time as specified by the applicable requirement.

Continuous emissions monitoring system means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

Continuous monitoring system (CMS) means a continuous emissions monitoring system, continuous automated sampling system, continuous parameter monitoring system or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by this subpart. The term refers to the total equipment used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Continuous parameter monitoring system means a monitoring system for continuously measuring and recording operating conditions associated with air pollution control device systems (*e.g.*, operating temperature, pressure, and power).

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limit, operating limit, or operator qualification and accessibility requirements.

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

Dioxins/furans means tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Electrostatic precipitator or wet electrostatic precipitator means an air pollution control device that uses both electrical forces and, if applicable, water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Existing sewage sludge incineration unit means a sewage sludge incineration unit the construction of which is commenced on or before October 14, 2010.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse.

Fluidized bed incinerator means an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring 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.

Modification means a change to an existing SSI unit later than September 21, 2011 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the SSI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the SSI unit used to calculate these costs, see the definition of SSI unit.

(2) Any physical change in the SSI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Modified sewage sludge incineration unit means an existing SSI unit that undergoes a modification, as defined in this section.

Multiple hearth incinerator means a circular steel furnace that contains a number of solid refractory hearths and a central rotating shaft; rabble arms that are designed to slowly rake the sludge on the hearth are attached to the rotating shaft. Dewatered sludge enters at the top and proceeds downward through the furnace from hearth to hearth, pushed along by the rabble arms.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of sewage sludge is combusted at any time in the SSI unit.

Particulate matter means filterable particulate matter emitted from SSI units as measured by Method 5 at 40 CFR part 60, appendix A–3 or Methods 26A or 29 at 40 CFR part 60, appendix A–8.

Power input to the electrostatic precipitator means the product of the test-run average secondary voltage and the test-run average secondary amperage to the electrostatic precipitator collection plates.

Process change means a significant permit revision, but only with respect to those pollutant-specific emission units for which the proposed permit revision is applicable, including but not limited to:

(1) A change in the process employed at the wastewater treatment facility associated with the affected SSI unit (*e.g.*, the addition of tertiary treatment at the facility, which changes the method used for disposing of process solids and processing of the sludge prior to incineration).

(2) A change in the air pollution control devices used to comply with the emission limits for the affected SSI unit (*e.g.*, change in the sorbent used for activated carbon injection).

Sewage sludge means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incineration unit or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

Sewage sludge feed rate means the rate at which sewage sludge is fed into the incinerator unit.

Sewage sludge incineration (SSI) unit means an incineration unit combusting sewage sludge for the purpose of reducing the volume of the sewage sludge by removing combustible matter. Sewage sludge incineration unit designs include fluidized bed and multiple hearth. A SSI unit also includes, but is not limited to, the sewage sludge feed system, auxiliary fuel feed system, grate system, flue gas system, waste heat recovery equipment, if any, and bottom ash system. The SSI unit includes all ash handling systems connected to the bottom ash handling system. The combustion unit bottom ash system ends at the truck loading station or similar equipment that transfers the ash to final disposal. The SSI unit does not include air pollution control equipment or the stack.

Shutdown means the period of time after all sewage sludge has been combusted in the primary chamber.

Solid waste means any garbage, refuse, sewage sludge from a waste

treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014).

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup means the period of time between the activation, including the firing of fuels (*e.g.*, natural gas or distillate oil), of the system and the first feed to the unit.

Toxic equivalency means the product of the concentration of an individual dioxin isomer in an environmental mixture and the corresponding estimate of the compound-specific toxicity relative to tetrachlorinated dibenzo-p-dioxin, referred to as the toxic equivalency factor for that compound. Table 5 to this subpart lists the toxic equivalency factors.

Wet scrubber means an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquid to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

You means the owner or operator of an affected SSI unit.

TABLE 1 TO SUBPART MMMM OF PART 60—MODEL RULE—INCREMENTS OF PROGRESS AND COMPLIANCE SCHEDULES FOR EXISTING SEWAGE SLUDGE INCINERATION UNITS

Comply with these increments of progress	By these dates [a]
Increment 1—Submit final control plan	(Dates to be specified in state plan)
Increment 2—Final compliance	(Dates to be specified in state plan) [b]

[a] Site-specific schedules can be used at the discretion of the state.
[b] The date can be no later than 3 years after the effective date of state plan approval or March 21, 2016 for SSI units that commenced construction on or before October 14, 2010.

TABLE 2 TO SUBPART MMMM OF PART 60—MODEL RULE—EMISSION LIMITS AND STANDARDS FOR EXISTING FLUIDIZED BED SEWAGE SLUDGE INCINERATION UNITS

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Particulate matter	18 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters sample per run).	Performance test (Method 5 at 40 CFR part 60, appendix A–3; Method 26A or Method 29 at 40 CFR part 60, appendix A–8).
Hydrogen chloride	0.51 parts per million by dry volume.	3-run average (Collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 26A at 40 CFR part 60, appendix A–8).
Carbon monoxide	64 parts per million by dry volume.	3-run average (collect sample for a minimum duration of one hour per run).	Performance test (Method 10, 10A, or 10B at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis); or Dioxins/furans (toxic equivalency basis) [b]	1.2 nanograms per dry standard cubic meter (total mass basis); or 0.10 nanograms per dry standard cubic meter (toxic equivalency basis).	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Mercury	0.037 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008) [c], collect a minimum volume of 1 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A–8).	Performance test (Method 29 at 40 CFR part 60, appendix A–8; Method 30B at 40 CFR part 60, appendix A–8; or ASTM D6784–02 (Reapproved 2008).[c]
Oxides of nitrogen	150 parts per million by dry volume.	3-run average (Collect sample for a minimum duration of one hour per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Sulfur dioxide	15 parts per million by dry volume.	3-run average (For Method 6, collect a minimum volume of 60 liters per run. For Method 6C, collect sample for a minimum duration of one hour per run).	Performance test (Method 6 or 6C at 40 CFR part 40, appendix A–4; or ANSI/ASME PTC–19.10–1981.[c]
Cadmium	0.0016 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8). Use GFAAS or ICP/MS for the analytical finish.
Lead	0.0074 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters sample per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8. Use GFAAS or ICP/MS for the analytical finish.
Fugitive emissions from ash handling.	Visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods.	Visible emission test (Method 22 of appendix A–7 of this part).

[a] All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.
[b] You have the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.
[c] Incorporated by reference, *see* § 60.17.

TABLE 3 TO SUBPART MMMM OF PART 60—MODEL RULE—EMISSION LIMITS AND STANDARDS FOR EXISTING MULTIPLE HEARTH SEWAGE SLUDGE INCINERATION UNITS

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Particulate matter	80 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 0.75 dry standard cubic meters per run).	Performance test (Method 5 at 40 CFR part 60, appendix A–3; Method 26A or Method 29 at 40 CFR part 60, appendix A–8).
Hydrogen chloride	1.2 parts per million by dry volume.	3-run average (For Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 26 or 26A at 40 CFR part 60, appendix A–8).
Carbon monoxide	3,800 parts per million by dry volume.	3-run average (collect sample for a minimum duration of one hour per run).	Performance test (Method 10, 10A, or 10B at 40 CFR part 60, appendix A–4).
Dioxins/furans (total mass basis).	5.0 nanograms per dry standard cubic meter; or	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 23 at 40 CFR part 60, appendix A–7).
Dioxins/furans (toxic equivalency basis) [b].	0.32 nanograms per dry standard cubic meter.		

For the air pollutant	You must meet this emission limit [a]	Using these averaging methods and minimum sampling volumes or durations	And determining compliance using this method
Mercury	0.28 milligrams per dry standard cubic meter.	3-run average (For Method 29 and ASTM D6784–02 (Reapproved 2008),[c] collect a minimum volume of 1 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A–8).	Performance test (Method 29 at 40 CFR part 60, appendix A–8; Method 30B at 40 CFR part 60, appendix A–8; or ASTM D6784–02 (Reapproved 2008)).[c]
Oxides of nitrogen	220 parts per million by dry volume.	3-run average (Collect sample for a minimum duration of one hour per run).	Performance test (Method 7 or 7E at 40 CFR part 60, appendix A–4).
Sulfur dioxide	26 parts per million by dry volume.	3-run average (For Method 6, collect a minimum volume of 200 liters per run. For Method 6C, collect sample for a minimum duration of one hour per run).	Performance test (Method 6 or 6C at 40 CFR part 40, appendix A–4; or ANSI/ASME PTC 19.10–1981).[c]
Cadmium	0.095 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).
Lead	0.30 milligrams per dry standard cubic meter.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run).	Performance test (Method 29 at 40 CFR part 60, appendix A–8).
Fugitive emissions from ash handling.	Visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) for no more than 5 percent of the hourly observation period.	Three 1-hour observation periods	Visible emission test (Method 22 of appendix A–7 of this part).

[a] All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.
[b] You have the option to comply with either the dioxin/furan emission limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.
[c] Incorporated by reference, *see* § 60.17.

Table 4 to Subpart MMMM of Part 60—Model Rule—Operating Parameters for Existing Sewage Sludge Incineration Units [a]

For these operating parameters	You must establish these operating limits	And monitor using these minimum frequencies		
		Data measurement	Data recording [b]	Data averaging period for compliance
All sewage sludge incineration units				
Combustion chamber operating temperature (not required if afterburner temperature is monitored).	Minimum combustion chamber operating temperature or afterburner temperature.	Continuous	Every 15 minutes.	12-hour block.
Fugitive emissions from ash handling.	Site-specific operating requirements.	Not applicable.	No applicable	Not applicable.
Scrubber				
Pressure drop across each wet scrubber.	Minimum pressure drop	Continuous	Every 15 minutes.	12-hour block.
Scrubber liquid flow rate	Minimum flow rate	Continuous	Every 15 minutes.	12-hour block.
Scrubber liquid pH	Minimum pH	Continuous	Every 15 minutes.	3-hour block.
Fabric Filter				
Alarm time of the bag leak detection system alarm.	Maximum alarm time of the bag leak detection system alarm (this operating limit is provided in § 60.4850 and is not established on a site-specific basis)			
Electrostatic precipitator				
Secondary voltage of the electrostatic precipitator collection plates.	Minimum power input to the electrostatic precipitator collection plates.	Continuous	Hourly	12-hour block.

For these operating parameters	You must establish these operating limits	And monitor using these minimum frequencies		
		Data measurement	Data recording[b]	Data averaging period for compliance
Secondary amperage of the electrostatic precipitator collection plates.				
Effluent water flow rate at the outlet of the electrostatic precipitator.	Minimum effluent water flow rate at the outlet of the electrostatic precipitator.	Hourly	Hourly	12-hour block.
Activated carbon injection				
Mercury sorbent injection rate	Minimum mercury sorbent injection rate.	Hourly	Hourly	12-hour block.
Dioxin/furan sorbent injection rate ...	Minimum dioxin/furan sorbent injection rate.			
Carrier gas flow rate or carrier gas pressure drop.	Minimum carrier gas flow rate or minimum carrier gas pressure drop.	Continuous ...	Every 15 minutes.	12-hour block.
Afterburner				
Temperature of the afterburner combustion chamber.	Minimum temperature of the afterburner combustion chamber.	Continuous ...	Every 15 minutes.	12-hour block.

[a] As specified in § 60.5190, you may use a continuous emissions monitoring system or continuous automated sampling system in lieu of establishing certain operating limits.

[b] This recording time refers to the minimum frequency that the continuous monitor or other measuring device initially records data. For all data recorded every 15 minutes, you must calculate hourly arithmetic averages. For all parameters, you use hourly averages to calculate the 12-hour or 3-hour block average specified in this table for demonstrating compliance. You maintain records of 1-hour averages.

Table 5 to Subpart MMMM of Part 60—Model Rule—Toxic Equivalency Factors

Dioxin/furan isomer	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.3
1,2,3,7,8-pentachlorinated dibenzofuran	0.03
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.0003

Table 6 to Subpart MMMM of Part 60—Model Rule—Summary of Reporting Requirements for Existing Sewage Sludge Incineration Units[a]

Report	Due date	Contents	Reference
Increments of progress report.	No later than 10 business days after the compliance date for the increment.	1. Final control plan including air pollution control device descriptions, process changes, type of waste to be burned, and the maximum design sewage sludge burning capacity. 2. Notification of any failure to meet an increment of progress. 3. Notification of any closure.	§ 60.5235(a).
Initial compliance report	No later than 60 days following the initial performance test.	1. Company name and address ..... 2. Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report. 3. Date of report.	§ 60.5235(b).

Report	Due date	Contents	Reference
		4. Complete test report for the initial performance test. 5. Results of CMS[b] performance evaluation. 6. The values for the site-specific operating limits and the calculations and methods used to establish each operating limit. 7. Documentation of installation of bag leak detection system for fabric filter. 8. Results of initial air pollution control device inspection, including a description of repairs. 9. The site-specific monitoring plan required under § 60.5200. 10. The site-specific monitoring plan for your ash handling system required under § 60.5200.	
Annual compliance report ..	No later than 12 months following the submission of the initial compliance report; subsequent reports are to be submitted no more than 12 months following the previous report.	1. Company name and address ..... 2. Statement and signature by responsible official. 3. Date and beginning and ending dates of report. 4. If a performance test was conducted during the reporting period, the results of the test, including any new operating limits and associated calculations and the type of activated carbon used, if applicable. 5. For each pollutant and operating parameter recorded using a CMS, the highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable. 6. If no deviations from emission limits, emission standards, or operating limits occurred, a statement that no deviations occurred. 7. If a fabric filter is used, the date, time, and duration of alarms. 8. If a performance evaluation of a CMS was conducted, the results, including any new operating limits and their associated calculations. 9. If you met the requirements of § 60.5205(a)(3) and did not conduct a performance test, include the dates of the last three performance tests, a comparison to the 50 percent emission limit threshold of the emission level achieved in the last three performance tests, and a statement as to whether there have been any process changes. 10. Documentation of periods when all qualified SSI unit operators were unavailable for more than 8 hours but less than 2 weeks. 11. Results of annual pollutions control device inspections, including description of repairs. 12. If there were no periods during which your CMSs had malfunctions, a statement that there were no periods during which your CMSs had malfunctions. 13. If there were no periods during which your CMSs were out of control, a statement that there were no periods during which your CMSs were out of control. 14. If there were no operator training deviations, a statement that there were no such deviations. 15. Information on monitoring plan revisions, including a copy of any revised monitoring plan.	§ 60.5235(c).
Deviation report (deviations from emission limits, emission standards, or operating limits, as specified in § 60.5235(e)(1)).	By August 1 of a calendar year for data collected during the first half of the calendar year; by February 1 of a calendar year for data collected during the second half of the calendar year.	*If using a CMS:* ..... 1. Company name and address. 2. Statement by a responsible official. 3. The calendar dates and times your unit deviated from the emission limits or operating limits. 4. The averaged and recorded data for those dates. 5. Duration and cause of each deviation. 6. Dates, times, and causes for monitor downtime incidents. 7. A copy of the operating parameter monitoring data during each deviation and any test report that documents the emission levels.	§ 60.5235(d).

Report	Due date	Contents	Reference
		8. For periods of CMS malfunction or when a CMS was out of control, you must include the information specified in § 60.5235(d)(3)(viii). *If not using a CMS:.* 1. Company name and address. 2. Statement by a responsible official. 3. The total operating time of each affected SSI. 4. The calendar dates and times your unit deviated from the emission limits, emission standard, or operating limits. 5. The averaged and recorded data for those dates. 6. Duration and cause of each deviation. 7. A copy of any performance test report that showed a deviation from the emission limits or standards. 8. A brief description of any malfunction, a description of actions taken during the malfunction to minimize emissions, and corrective action taken.	
Notification of qualified operator deviation (if all qualified operators are not accessible for 2 weeks or more).	Within 10 days of deviation.	1. Statement of cause of deviation ..... 2. Description of actions taken to ensure that a qualified operator will be available. 3. The date when a qualified operator will be accessible.	§ 60.5235(e).
Notification of status of qualified operator deviation.	Every 4 weeks following notification of deviation.	1. Description of actions taken to ensure that a qualified operator is accessible. 2. The date when you anticipate that a qualified operator will be accessible. 3. Request for approval to continue operation.	§ 60.5235(e).
Notification of resumed operation following shutdown (due to qualified operator deviation and as specified in § 60.5155(b)(2)(i).	Within five days of obtaining a qualified operator and resuming operation.	1. Notification that you have obtained a qualified operator and are resuming operation.	§ 60.5235(e).
Notification of a force majeure.	As soon as practicable following the date you first knew, or through due diligence should have known that the event may cause or caused a delay in conducting a performance test beyond the regulatory deadline; the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification must occur as soon as practicable.	1. Description of the force majeure event ..... 2. Rationale for attributing the delay in conducting the performance test beyond the regulatory deadline to the force majeure. 3. Description of the measures taken or to be taken to minimize the delay. 4. Identification of the date by which you propose to conduct the performance test.	§ 60.5235(f).
Notification of intent to start or stop use of a CMS.	1 month before starting or stopping use of a CMS.	1. Intent to start or stop use of a CMS	§ 60.5235(g).
Notification of intent to conduct a performance test.	At least 30 days prior to the performance test.	1. Intent to conduct a performance test to comply with this subpart.	
Notification of intent to conduct a rescheduled performance test.	At least 7 days prior to the date of a rescheduled performance test.	1. Intent to conduct a rescheduled performance test to comply with this subpart.	

[a] This table is only a summary, *see* the referenced sections of the rule for the complete requirements.
[b] CMS means continuous monitoring system.

Subpart OOOO—Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

SOURCE: 77 FR 49542', Aug, 16, 2012, unless otherwise noted.

§ 60.5360 What is the purpose of this subpart?

This subpart establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO_2) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011.

§ 60.5365 Am I subject to this subpart?

You are subject to the applicable provisions of this subpart if you are the owner or operator of one or more of the onshore affected facilities listed in paragraphs (a) through (g) of this section for which you commence construction, modification or reconstruction after August 23, 2011.

(a) Each gas well affected facility, which is a single natural gas well.

(b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

(c) Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

(d)(1) For the oil production segment (between the wellhead and the point of custody transfer to an oil pipeline), each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

(2) For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants), each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh.

(3) For natural gas processing plants, each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller.

(e) Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

(f) The group of all equipment, except compressors, within a process unit is an affected facility.

(1) Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(2) Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§ 60.5400, 60.5401, 60.5402, 60.5421, and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§ 60.5400, 60.5401, 60.5402, 60.5421, and 60.5422 of this subpart.

(3) The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

(g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.

(1) Each sweetening unit that processes natural gas is an affected facility; and

(2) Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.

(3) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in § 60.5423(c) but are not required to comply with §§ 60.5405 through 60.5407 and §§ 60.5410(g) and 60.5415(g) of this subpart.

(4) Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§ 60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

(h) The following provisions apply to gas well facilities that are hydraulically refractured.

(1) A gas well facility that conducts a well completion operation following hydraulic refracturing is not an affected facility, provided that the requirements of § 60.5375 are met. For purposes of this provision, the dates specified in § 60.5375(a) do not apply, and such facilities, as of October 15, 2012, must meet the requirements of § 60.5375(a)(1) through (4).

(2) A well completion operation following hydraulic refracturing at a gas well facility not conducted pursuant to § 60.5375 is a modification to the gas well affected facility.

(3) Refracturing of a gas well facility does not affect the modification status of other equipment, process units, storage vessels, compressors, or pneumatic controllers located at the well site.

(4) Sources initially constructed after August 23, 2011, are considered affected sources regardless of this provision.

§ 60.5370 When must I comply with this subpart?

(a) You must be in compliance with the standards of this subpart no later than October 15, 2012 or upon startup, whichever is later.

(b) The provisions for exemption from compliance during periods of startup, shutdown and malfunctions provided for in 40 CFR 60.8(c) do not apply to this subpart.

(c) You are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

§ 60.5375 What standards apply to gas well affected facilities?

If you are the owner or operator of a gas well affected facility, you must comply with paragraphs (a) through (f) of this section.

(a) Except as provided in paragraph (f) of this section, for each well completion operation with hydraulic fracturing begun prior to January 1, 2015, you must comply with the requirements of paragraphs (a)(3) and (4) of this section unless a more stringent state or local emission control requirement is applicable; optionally, you may comply with the requirements of paragraphs (a)(1) through (4) of this section. For each new well completion operation with hydraulic fracturing begun on or after January 1, 2015, you must comply with the requirements in paragraphs (a)(1) through (4) of this section.

(1) For the duration of flowback, route the recovered liquids into one or more storage vessels or re-inject the recovered liquids into the well or another well, and route the recovered gas into a gas flow line or collection system, re-inject the recovered gas into the well or another well, use the recovered gas as an on-site fuel source, or use the recovered gas for another useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere. If this is infeasible, follow the requirements in paragraph (a)(3) of this section.

(2) All salable quality gas must be routed to the gas flow line as soon as practicable. In cases where flowback emissions cannot be directed to the flow line, you must follow the requirements in paragraph (a)(3) of this section.

(3) You must capture and direct flowback emissions to a completion combustion device, except in conditions that may result in a fire hazard

or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost or waterways. Completion combustion devices must be equipped with a reliable continuous ignition source over the duration of flowback.

(4) You have a general duty to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery.

(b) You must maintain a log for each well completion operation at each gas well affected facility. The log must be completed on a daily basis for the duration of the well completion operation and must contain the records specified in § 60.5420(c)(1)(iii).

(c) You must demonstrate initial compliance with the standards that apply to gas well affected facilities as required by § 60.5410.

(d) You must demonstrate continuous compliance with the standards that apply to gas well affected facilities as required by § 60.5415.

(e) You must perform the required notification, recordkeeping and reporting as required by § 60.5420.

(f)(1) For each gas well affected facility specified in paragraphs (f)(1)(i) and (ii) of this section, you must comply with the requirements of paragraphs (f)(2) and (3) of this section.

(i) Each well completion operation with hydraulic fracturing at a gas well affected facility meeting the criteria for a wildcat or delineation well.

(ii) Each well completion operation with hydraulic fracturing at a gas well affected facility meeting the criteria for a non-wildcat low pressure gas well or non-delineation low pressure gas well.

(2) You must capture and direct flowback emissions to a completion combustion device, except in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost or waterways. Completion combustion devices must be equipped with a reliable continuous ignition source over the duration of flowback. You must also comply with paragraphs (a)(4) and (b) through (e) of this section.

(3) You must maintain records specified in § 60.5420(c)(1)(iii) for wildcat, delineation and low pressure gas wells.

§ 60.5380 What standards apply to centrifugal compressor affected facilities?

You must comply with the standards in paragraphs (a) through (d) of this section for each centrifugal compressor affected facility.

(a)(1) You must reduce VOC emissions from each centrifugal compressor wet seal fluid degassing system by 95.0 percent or greater.

(2) If you use a control device to reduce emissions, you must equip the wet seal fluid degassing system with a cover that meets the requirements of § 60.5411(b) and is connected through a closed vent system that meets the requirements of § 60.5411(a) to a control device that meets the conditions specified in § 60.5412.

(b) You must demonstrate initial compliance with the standards that apply to centrifugal compressor affected facilities as required by § 60.5410.

(c) You must demonstrate continuous compliance with the standards that apply to centrifugal compressor affected facilities as required by § 60.5415.

(d) You must perform the required notification, recordkeeping, and reporting as required by § 60.5420.

§ 60.5385 What standards apply to reciprocating compressor affected facilities?

You must comply with the standards in paragraphs (a) through (d) of this section for each reciprocating compressor affected facility.

(a) You must replace the reciprocating compressor rod packing according to either paragraph (a)(1) or (2) of this section.

(1) Before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

(2) Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of

startup for a new reciprocating compressor for which the rod packing has not yet been replaced.

(b) You must demonstrate initial compliance with standards that apply to reciprocating compressor affected facilities as required by § 60.5410.

(c) You must demonstrate continuous compliance with standards that apply to reciprocating compressor affected facilities as required by § 60.5415.

(d) You must perform the required notification, recordkeeping, and reporting as required by § 60.5420.

§ 60.5390 What standards apply to pneumatic controller affected facilities?

For each pneumatic controller affected facility you must comply with the VOC standards, based on natural gas as a surrogate for VOC, in either paragraph (b) or (c) of this section, as applicable. Pneumatic controllers meeting the conditions in paragraph (a) of this section are exempt from this requirement.

(a) The requirements of paragraph (b) or (c) of this section are not required if you determine that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet per hour is required based on functional needs, including but not limited to response time, safety and positive actuation.

(b)(1) Each pneumatic controller affected facility at a natural gas processing plant must have a bleed rate of zero.

(2) Each pneumatic controller affected facility at a natural gas processing plant must be tagged with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that pneumatic controller as required in § 60.5420(c)(4)(iv).

(c)(1) Each pneumatic controller affected facility constructed, modified or reconstructed on or after October 15, 2013 at a location between the wellhead and a natural gas processing plant must have a bleed rate less than or equal to 6 standard cubic feet per hour.

(2) Each pneumatic controller affected facility at a location between the wellhead and a natural gas processing plant must be tagged with the month and year of installation, reconstruction or modification, and identification information that allows traceability to the records for that controller as required in § 60.5420(c)(4)(iii).

(d) You must demonstrate initial compliance with standards that apply to pneumatic controller affected facilities as required by § 60.5410.

(e) You must demonstrate continuous compliance with standards that apply to pneumatic controller affected facilities as required by § 60.5415.

(f) You must perform the required notification, recordkeeping, and reporting as required by § 60.5420, except that you are not required to submit the notifications specified in § 60.5420(a).

§ 60.5395 What standards apply to storage vessel affected facilities?

Except as provided in paragraph (d) of this section, you must comply with the standards in this section no later than October 15, 2013 for each storage vessel affected facility constructed, modified or reconstructed after August 23, 2011, with VOC emissions equal to or greater than 6 tpy, as determined in paragraph (a) of this section.

(a) *Emissions determination*—(1) *Well sites with no other wells in production.* For each storage vessel constructed, modified or reconstructed at a well site with no other wells in production, you must determine the VOC emission rate for each storage vessel affected facility using any generally accepted model or calculation methodology within 30 days after startup, and minimize emissions to the extent practicable during the 30-day period using good engineering practices. For each storage vessel affected facility emitting more than 6 tpy VOC, you must reduce VOC emissions by 95.0 percent or greater within 60 days after startup.

(2) *Well sites with one or more wells already in production.* For each storage vessel constructed, modified or reconstructed at a well site with one or more wells already in production, you must determine the VOC emission rate for each storage vessel affected facility using any generally accepted model or calculation methodology upon startup.

For each storage vessel affected facility emitting more than 6 tpy VOC, you must reduce VOC emissions by 95.0 percent or greater upon startup.

(b) *Control requirements.* (1) If you use a control device (such as an enclosed combustion device or vapor recovery device) to reduce emissions, you must equip the storage vessel with a cover that meets the requirements of § 60.5411(b) and is connected through a closed vent system that meets the requirements of § 60.5411(a) to a control device that meets the conditions specified in § 60.5412.

(2) If you use a floating roof to reduce emissions, you must meet the requirements of § 60.112b(a)(1) or (2) and the relevant monitoring, inspection, recordkeeping, and reporting requirements in 40 CFR part 60, subpart Kb.

(c) *Compliance, notification, recordkeeping, and reporting.* (1) You must demonstrate initial compliance with standards that apply to storage vessel affected facilities as required by § 60.5410.

(2) You must demonstrate continuous compliance with standards that apply to storage vessel affected facilities as required by § 60.5415.

(3) You must perform the required notification, recordkeeping, and reporting as required by § 60.5420.

(d) *Exemptions.* This section does not apply to storage vessels subject to and controlled in accordance with the requirements for storage vessels in 40 CFR part 60, subpart Kb, or 40 CFR part 63, subparts G, CC, HH, WW, or HHH.

§ 60.5400 What equipment leak standards apply to affected facilities at an onshore natural gas processing plant?

This section applies to the group of all equipment, except compressors, within a process unit.

(a) You must comply with the requirements of §§ 60.482–1a(a), (b), and (d), 60.482–2a, and 60.482–4a through 60.482–11a, except as provided in § 60.5401.

(b) You may elect to comply with the requirements of §§ 60.483–1a and 60.483–2a, as an alternative.

(c) You may apply to the Administrator for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this subpart according to the requirements of § 60.5402 of this subpart.

(d) You must comply with the provisions of § 60.485a of this part except as provided in paragraph (f) of this section.

(e) You must comply with the provisions of §§ 60.486a and 60.487a of this part except as provided in §§ 60.5401, 60.5421, and 60.5422 of this part.

(f) You must use the following provision instead of § 60.485a(d)(1): Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator demonstrates that the piece of equipment is not in VOC service or in wet gas service. For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight. For a piece of equipment to be considered in wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process. For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM E169–93, E168–92, or E260–96 (incorporated by reference as specified in § 60.17) must be used.

§ 60.5401 What are the exceptions to the equipment leak standards for affected facilities at onshore natural gas processing plants?

(a) You may comply with the following exceptions to the provisions of § 60.5400(a) and (b).

(b)(1) Each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks by the methods specified in § 60.485a(b) except as provided in § 60.5400(c) and in paragraph (b)(4) of this section, and § 60.482–4a(a) through (c) of subpart VVa.

(2) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(3)(i) When a leak is detected, it must be repaired as soon as practicable, but

no later than 15 calendar days after it is detected, except as provided in § 60.482–9a.

(ii) A first attempt at repair must be made no later than 5 calendar days after each leak is detected.

(4)(i) Any pressure relief device that is located in a nonfractionating plant that is monitored only by non-plant personnel may be monitored after a pressure release the next time the monitoring personnel are on-site, instead of within 5 days as specified in paragraph (b)(1) of this section and § 60.482–4a(b)(1) of subpart VVa.

(ii) No pressure relief device described in paragraph (b)(4)(i) of this section must be allowed to operate for more than 30 days after a pressure release without monitoring.

(c) Sampling connection systems are exempt from the requirements of § 60.482–5a.

(d) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a nonfractionating plant that does not have the design capacity to process 283,200 standard cubic meters per day (scmd) (10 million standard cubic feet per day) or more of field gas are exempt from the routine monitoring requirements of §§ 60.482–2a(a)(1) and 60.482–7a(a), and paragraph (b)(1) of this section.

(e) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service within a process unit that is located in the Alaskan North Slope are exempt from the routine monitoring requirements of §§ 60.482–2a(a)(1), 60.482–7a(a), and paragraph (b)(1) of this section.

(f) An owner or operator may use the following provisions instead of § 60.485a(e):

(1) Equipment is in heavy liquid service if the weight percent evaporated is 10 percent or less at 150 °C (302 °F) as determined by ASTM Method D86–96 (incorporated by reference as specified in § 60.17).

(2) Equipment is in light liquid service if the weight percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86–96 (incorporated by reference as specified in § 60.17).

(g) An owner or operator may use the following provisions instead of § 60.485a(b)(2): A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in § 60.486a(e)(8). Divide these readings by the initial calibration values for each scale and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

§ 60.5402 What are the alternative emission limitations for equipment leaks from onshore natural gas processing plants?

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under any design, equipment, work practice or operational standard, the Administrator will publish, in the FEDERAL REGISTER, a notice permitting the use of that alternative means for the purpose of compliance with that standard. The notice may condition permission on requirements related to

the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section must be published only after notice and an opportunity for a public hearing.

(c) The Administrator will consider applications under this section from either owners or operators of affected facilities, or manufacturers of control equipment.

(d) The Administrator will treat applications under this section according to the following criteria, except in cases where the Administrator concludes that other criteria are appropriate:

(1) The applicant must collect, verify and submit test data, covering a period of at least 12 months, necessary to support the finding in paragraph (a) of this section.

(2) If the applicant is an owner or operator of an affected facility, the applicant must commit in writing to operate and maintain the alternative means so as to achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under the design, equipment, work practice or operational standard.

§ 60.5405 What standards apply to sweetening units at onshore natural gas processing plants?

(a) During the initial performance test required by § 60.8(b), you must achieve at a minimum, an SO_2 emission reduction efficiency (Z_i) to be determined from Table 1 of this subpart based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

(b) After demonstrating compliance with the provisions of paragraph (a) of this section, you must achieve at a minimum, an SO_2 emission reduction efficiency (Z_c) to be determined from Table 2 of this subpart based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

§ 60.5406 What test methods and procedures must I use for my sweetening units affected facilities at onshore natural gas processing plants?

(a) In conducting the performance tests required in § 60.8, you must use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in paragraph § 60.8(b).

(b) During a performance test required by § 60.8, you must determine the minimum required reduction efficiencies (Z) of SO_2 emissions as required in § 60.5405(a) and (b) as follows:

(1) The average sulfur feed rate (X) must be computed as follows:

$$X = KQ_aY$$

Where:

X = average sulfur feed rate, Mg/D (LT/D).

Q_a = average volumetric flow rate of acid gas from sweetening unit, dscm/day (dscf/day).

Y = average H_2S concentration in acid gas feed from sweetening unit, percent by volume, expressed as a decimal.

K = (32 kg S/kg-mole)/((24.04 dscm/kg-mole)(1000 kg S/Mg)).

= 1.331×10^{-3}Mg/dscm, for metric units.

= (32 lb S/lb-mole)/((385.36 dscf/lb-mole)(2240 lb S/long ton)).

= 3.707×10^{-5} long ton/dscf, for English units.

(2) You must use the continuous readings from the process flowmeter to determine the average volumetric flow rate (Q_a) in dscm/day (dscf/day) of the acid gas from the sweetening unit for each run.

(3) You must use the Tutwiler procedure in § 60.5408 or a chromatographic procedure following ASTM E260–96 (incorporated by reference as specified in § 60.17) to determine the H_2S concentration in the acid gas feed from the sweetening unit (Y). At least one sample per hour (at equally spaced intervals) must be taken during each 4-hour run. The arithmetic mean of all samples must be the average H_2S concentration (Y) on a dry basis for the run. By multiplying the result from the Tutwiler procedure by 1.62×10^{-3},

the units gr/100 scf are converted to volume percent.

(4) Using the information from paragraphs (b)(1) and (b)(3) of this section, Tables 1 and 2 of this subpart must be used to determine the required initial (Z_i) and continuous (Z_c) reduction efficiencies of SO_2 emissions.

(c) You must determine compliance with the SO_2 standards in § 60.5405(a) or (b) as follows:

(1) You must compute the emission reduction efficiency (R) achieved by the sulfur recovery technology for each run using the following equation:

$$R = (100S)\frac{\square}{S + E}$$

(2) You must use the level indicators or manual soundings to measure the liquid sulfur accumulation rate in the product storage vessels. You must use readings taken at the beginning and end of each run, the tank geometry, sulfur density at the storage temperature, and sample duration to determine the sulfur production rate (S) in kg/hr (lb/hr) for each run.

(3) You must compute the emission rate of sulfur for each run as follows:

$$E = \frac{C_e Q_{sd}}{K_1}$$

Where:

E = emission rate of sulfur per run, kg/hr.

C_e = concentration of sulfur equivalent (SO^{2+} reduced sulfur), g/dscm (lb/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

K_1 = conversion factor, 1000 g/kg (7000 gr/lb).

(4) The concentration (C_e) of sulfur equivalent must be the sum of the SO_2 and TRS concentrations, after being converted to sulfur equivalents. For each run and each of the test methods specified in this paragraph (c) of this section, you must use a sampling time of at least 4 hours. You must use Method 1 of appendix A to part 60 of this chapter to select the sampling site. The sampling point in the duct must be at the centroid of the cross-section if the area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than 1 m (39 in) if the cross-sectional area is 5 m^2 or more, and the centroid is more than 1 m (39 in.) from the wall.

(i) You must use Method 6 of appendix A to part 60 of this chapter to determine the SO_2 concentration. You must take eight samples of 20 minutes each at 30-minute intervals. The arithmetic average must be the concentration for the run. The concentration must be multiplied by 0.5×10^{-3} to convert the results to sulfur equivalent.

(ii) You must use Method 15 of appendix A to part 60 of this chapter to determine the TRS concentration from reduction-type devices or where the oxygen content of the effluent gas is less than 1.0 percent by volume. The sampling rate must be at least 3 liters/min (0.1 ft^3/min) to insure minimum residence time in the sample line. You must take sixteen samples at 15-minute intervals. The arithmetic average of all the samples must be the concentration for the run. The concentration in ppm reduced sulfur as sulfur must be multiplied by 1.333×10^{-3} to convert the results to sulfur equivalent.

(iii) You must use Method 16A or Method 15 of appendix A to part 60 of this chapter or ANSI/ASME PTC 19.10–1981, Part 10 (manual portion only) (incorporated by reference as specified in § 60.17) to determine the reduced sulfur concentration from oxidation-type devices or where the oxygen content of the effluent gas is greater than 1.0 percent by volume. You must take eight samples of 20 minutes each at 30-minute intervals. The arithmetic average must be the concentration for the

run. The concentration in ppm reduced sulfur as sulfur must be multiplied by 1.333×10^{-3} to convert the results to sulfur equivalent.

(iv) You must use Method 2 of appendix A to part 60 of this chapter to determine the volumetric flow rate of the effluent gas. A velocity traverse must be conducted at the beginning and end of each run. The arithmetic average of the two measurements must be used to calculate the volumetric flow rate (Q_{sd}) for the run. For the determination of the effluent gas molecular weight, a single integrated sample over the 4-hour period may be taken and analyzed or grab samples at 1-hour intervals may be taken, analyzed, and averaged. For the moisture content, you must take two samples of at least 0.10 dscm (3.5 dscf) and 10 minutes at the beginning of the 4-hour run and near the end of the time period. The arithmetic average of the two runs must be the moisture content for the run.

§ 60.5407 What are the requirements for monitoring of emissions and operations from my sweetening unit affected facilities at onshore natural gas processing plants?

(a) If your sweetening unit affected facility is located at an onshore natural gas processing plant and is subject to the provisions of § 60.5405(a) or (b) you must install, calibrate, maintain, and operate monitoring devices or perform measurements to determine the following operations information on a daily basis:

(1) *The accumulation of sulfur product over each 24-hour period.* The monitoring method may incorporate the use of an instrument to measure and record the liquid sulfur production rate, or may be a procedure for measuring and recording the sulfur liquid levels in the storage vessels with a level indicator or by manual soundings, with subsequent calculation of the sulfur production rate based on the tank geometry, stored sulfur density, and elapsed time between readings. The method must be designed to be accurate within ±2 percent of the 24-hour sulfur accumulation.

(2) *The* H_2S *concentration in the acid gas from the sweetening unit for each 24-hour period.* At least one sample per 24-hour period must be collected and analyzed using the equation specified in § 60.5406(b)(1). The Administrator may require you to demonstrate that the H_2S concentration obtained from one or more samples over a 24-hour period is within ±20 percent of the average of 12 samples collected at equally spaced intervals during the 24-hour period. In instances where the H_2S concentration of a single sample is not within ±20 percent of the average of the 12 equally spaced samples, the Administrator may require a more frequent sampling schedule.

(3) *The average acid gas flow rate from the sweetening unit.* You must install and operate a monitoring device to continuously measure the flow rate of acid gas. The monitoring device reading must be recorded at least once per hour during each 24-hour period. The average acid gas flow rate must be computed from the individual readings.

(4) *The sulfur feed rate (X).* For each 24-hour period, you must compute X using the equation specified in § 60.5406(b)(1).

(5) *The required sulfur dioxide emission reduction efficiency for the 24-hour period.* You must use the sulfur feed rate and the H_2S concentration in the acid gas for the 24-hour period, as applicable, to determine the required reduction efficiency in accordance with the provisions of § 60.5405(b).

(b) Where compliance is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device, you must install, calibrate, maintain, and operate monitoring devices and continuous emission monitors as follows:

(1) *A continuous monitoring system to measure the total sulfur emission rate (E) of* SO_2 *in the gases discharged to the atmosphere.* The SO_2 emission rate must be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system must be set so that the equivalent emission limit of § 60.5405(b) will be between 30 percent and 70 percent of the measurement range of the instrument system.

(2) Except as provided in paragraph (b)(3) of this section: A monitoring device to measure the temperature of the gas leaving the combustion zone of the incinerator, if compliance with

§ 60.5405(a) is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device. The monitoring device must be certified by the manufacturer to be accurate to within ±1 percent of the temperature being measured.

(3) When performance tests are conducted under the provision of § 60.8 to demonstrate compliance with the standards under § 60.5405, the temperature of the gas leaving the incinerator combustion zone must be determined using the monitoring device. If the volumetric ratio of sulfur dioxide to sulfur dioxide plus total reduced sulfur (expressed as SO_2) in the gas leaving the incinerator is equal to or less than 0.98, then temperature monitoring may be used to demonstrate that sulfur dioxide emission monitoring is sufficient to determine total sulfur emissions. At all times during the operation of the facility, you must maintain the average temperature of the gas leaving the combustion zone of the incinerator at or above the appropriate level determined during the most recent performance test to ensure the sulfur compound oxidation criteria are met. Operation at lower average temperatures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. You may request that the minimum incinerator temperature be reestablished by conducting new performance tests under § 60.8.

(4) Upon promulgation of a performance specification of continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants, you may, as an alternative to paragraph (b)(2) of this section, install, calibrate, maintain, and operate a continuous emission monitoring system for total reduced sulfur compounds as required in paragraph (d) of this section in addition to a sulfur dioxide emission monitoring system. The sum of the equivalent sulfur mass emission rates from the two monitoring systems must be used to compute the total sulfur emission rate (E).

(c) Where compliance is achieved through the use of a reduction control system not followed by a continually operated incineration device, you must install, calibrate, maintain, and operate a continuous monitoring system to measure the emission rate of reduced sulfur compounds as SO_2 equivalent in the gases discharged to the atmosphere. The SO_2 equivalent compound emission rate must be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system must be set so that the equivalent emission limit of § 60.5405(b) will be between 30 and 70 percent of the measurement range of the system. This requirement becomes effective upon promulgation of a performance specification for continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants.

(d) For those sources required to comply with paragraph (b) or (c) of this section, you must calculate the average sulfur emission reduction efficiency achieved (R) for each 24-hour clock interval. The 24-hour interval may begin and end at any selected clock time, but must be consistent. You must compute the 24-hour average reduction efficiency (R) based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E), using the equation in § 60.5406(c)(1).

(1) You must use data obtained from the sulfur production rate monitoring device specified in paragraph (a) of this section to determine S.

(2) You must use data obtained from the sulfur emission rate monitoring systems specified in paragraphs (b) or (c) of this section to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system must provide at least one data point in each successive 15-minute interval. You must use at least two data points to calculate each 1-hour average. You must use a minimum of 18 1-hour averages to compute each 24-hour average.

(e) In lieu of complying with paragraphs (b) or (c) of this section, those sources with a design capacity of less than 152 Mg/D (150 LT/D) of H_2S expressed as sulfur may calculate the sulfur emission reduction efficiency achieved for each 24-hour period by:

$$R = \frac{K_2 S}{X}$$

Where:

R = The sulfur dioxide removal efficiency achieved during the 24-hour period, percent.

K_2 = Conversion factor, 0.02400 Mg/D per kg/hr (0.01071 LT/D per lb/hr).

S = The sulfur production rate during the 24-hour period, kg/hr (lb/hr).

X = The sulfur feed rate in the acid gas, Mg/D (LT/D).

(f) The monitoring devices required in paragraphs (b)(1), (b)(3) and (c) of this section must be calibrated at least annually according to the manufacturer's specifications, as required by § 60.13(b).

(g) The continuous emission monitoring systems required in paragraphs (b)(1), (b)(3), and (c) of this section must be subject to the emission monitoring requirements of § 60.13 of the General Provisions. For conducting the continuous emission monitoring system performance evaluation required by § 60.13(c), Performance Specification 2 of appendix B to part 60 of this chapter must apply, and Method 6 must be used for systems required by paragraph (b) of this section.

§ 60.5408 What is an optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure?

The Tutwiler procedure may be found in the Gas Engineers Handbook, Fuel Gas Engineering practices, The Industrial Press, 93 Worth Street, New York, NY, 1966, First Edition, Second Printing, page 6/25 (Docket A–80–20–A, Entry II–I–67).

(a) When an instantaneous sample is desired and H_2S concentration is ten grains per 1000 cubic foot or more, a 100 ml Tutwiler burette is used. For concentrations less than ten grains, a 500 ml Tutwiler burette and more dilute solutions are used. In principle, this method consists of titrating hydrogen sulfide in a gas sample directly with a standard solution of iodine.

(b) *Apparatus.* (See Figure 1 of this subpart) A 100 or 500 ml capacity Tutwiler burette, with two-way glass stopcock at bottom and three-way stopcock at top which connect either with inlet tubulature or glass-stoppered cylinder, 10 ml capacity, graduated in 0.1 ml subdivision; rubber tubing connecting burette with leveling bottle.

(c) *Reagents.* (1) Iodine stock solution, 0.1N. Weight 12.7 g iodine, and 20 to 25 g cp potassium iodide for each liter of solution. Dissolve KI in as little water as necessary; dissolve iodine in concentrated KI solution, make up to proper volume, and store in glass-stoppered brown glass bottle.

(2) Standard iodine solution, 1 ml=0.001771 g I. Transfer 33.7 ml of above 0.1N stock solution into a 250 ml volumetric flask; add water to mark and mix well. Then, for 100 ml sample of gas, 1 ml of standard iodine solution is equivalent to 100 grains H_2S per cubic feet of gas.

(3) Starch solution. Rub into a thin paste about one teaspoonful of wheat starch with a little water; pour into about a pint of boiling water; stir; let cool and decant off clear solution. Make fresh solution every few days.

(d) *Procedure.* Fill leveling bulb with starch solution. Raise (L), open cock (G), open (F) to (A), and close (F) when solutions starts to run out of gas inlet. Close (G). Purge gas sampling line and connect with (A). Lower (L) and open (F) and (G). When liquid level is several ml past the 100 ml mark, close (G) and (F), and disconnect sampling tube. Open (G) and bring starch solution to 100 ml mark by raising (L); then close (G). Open (F) momentarily, to bring gas in burette to atmospheric pressure, and close (F). Open (G), bring liquid level down to 10 ml mark by lowering (L). Close (G), clamp rubber tubing near (E) and disconnect it from burette. Rinse graduated cylinder with a standard iodine solution (0.00171 g I per ml); fill cylinder and record reading. Introduce successive small amounts of iodine thru (F); shake well after each addition; continue until a faint permanent blue color is obtained. Record reading; subtract from previous reading, and call difference D.

(e) With every fresh stock of starch solution perform a blank test as follows: Introduce fresh starch solution into burette up to 100 ml mark. Close (F) and (G). Lower (L) and open (G). When liquid level reaches the 10 ml mark, close (G). With air in burette, titrate as during a test and up to same end point. Call ml of iodine used C. Then, Grains H_2S per 100 cubic foot of gas = 100(D–C)

(f) Greater sensitivity can be attained if a 500 ml capacity Tutwiler burette is used with a more dilute (0.001N) iodine solution. Concentrations less than 1.0 grains per 100 cubic foot can be determined in this way. Usually, the starch-iodine end point is much less distinct, and a blank determination of end point, with H_2S-free gas or air, is required.

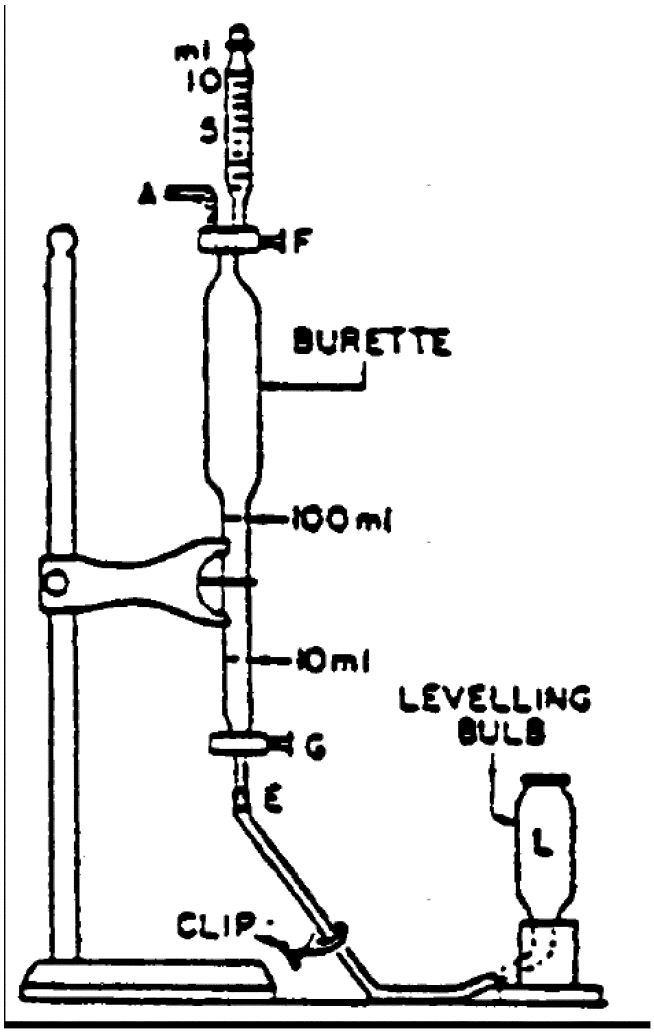

Figure 1. Tutwiler burette (lettered items mentioned in text).

§ 60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?

You must determine initial compliance with the standards for each affected facility using the requirements in paragraphs (a) through (g) of this section. The initial compliance period begins on October 15, 2012 or upon initial startup, whichever is later, and ends no later than one year after the initial startup date for your affected facility or no later than one year after October 15, 2012. The initial compliance period may be less than one full year.

(a) To achieve initial compliance with the standards for each well completion operation conducted at your gas well affected facility you must comply with paragraphs (a)(1) through (a)(4) of this section.

(1) You must submit the notification required in § 60.5420(a)(2).

(2) You must submit the initial annual report for your well affected facility as required in § 60.5420(b).

(3) You must maintain a log of records as specified in § 60.5420(c)(1) for each well completion operation conducted during the initial compliance period.

(4) For each gas well affected facility subject to both § 60.5375(a)(1) and (3), you must maintain records of one or more digital photographs with the date the photograph was taken and the latitude and longitude of the well site imbedded within or stored with the digital file showing the equipment for storing or re-injecting recovered liquid, equipment for routing recovered gas to the gas flow line and the completion combustion device (if applicable) connected to and operating at each gas well completion operation that occurred during the initial compliance period. As an alternative to imbedded latitude and longitude within the digital photograph, the digital photograph may consist of a photograph of the equipment connected and operating at each well completion operation with a photograph of a separately operating GIS device within the same digital picture, provided the latitude and longitude output of the GIS unit can be clearly read in the digital photograph.

(b)(1) To achieve initial compliance with standards for your centrifugal compressor affected facility you must reduce VOC emissions from each centrifugal compressor wet seal fluid degassing system by 95.0 percent or greater as required by § 60.5380 and as demonstrated by the requirements of § 60.5413.

(2) If you use a control device to reduce emissions, you must equip the wet seal fluid degassing system with a cover that meets the requirements of § 60.5411(b) and is connected through a closed vent system that meets the requirements of § 60.5411(a) to a control device that meets the conditions specified in § 60.5412.

(3) You must conduct an initial performance test as required in § 60.5413 within 180 days after initial startup or by October 15, 2012, whichever is later, and you must comply with the continuous compliance requirements in § 60.5415(b).

(4) You must conduct the initial inspections required in § 60.5416.

(5) You must install and operate the continuous parameter monitoring systems in accordance with § 60.5417.

(6) You must submit the notifications required in 60.7(a)(1), (3), and (4).

(7) You must submit the initial annual report for your centrifugal compressor affected facility as required in § 60.5420(b) for each centrifugal compressor affected facility

(8) You must maintain the records as specified in § 60.5420(c)(3).

(c) To achieve initial compliance with the standards for each reciprocating compressor affected facility you must comply with paragraphs (c)(1) through (4) of this section.

(1) During the initial compliance period, you must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.

(2) You must submit the notifications required in 60.7(a)(1), (3), and (4).

(3) You must submit the initial annual report for your reciprocating compressor as required in § 60.5420(b).

(4) You must maintain the records as specified in § 60.5420(c)(3) for each reciprocating compressor affected facility.

(d) To achieve initial compliance with emission standards for your pneumatic controller affected facility you comply with the requirements specified in paragraphs (d)(1) through (6) of this section.

(1) If applicable, you have demonstrated by maintaining records as specified in § 60.5420(c)(4)(ii) of your determination that the use of a pneumatic controller affected facility with a bleed rate greater than 6 standard cubic feet of gas per hour is required as specified in § 60.5390(a).

(2) You own or operate a pneumatic controller affected facility located at a natural gas processing plant and your pneumatic controller is driven other than by use of natural gas and therefore emits zero natural gas.

(3) You own or operate a pneumatic controller affected facility located between the wellhead and a natural gas processing plant and the manufacturer's design specifications indicate that the controller emits less than or equal to 6 standard cubic feet of gas per hour.

(4) You must tag each new pneumatic controller affected facility according to the requirements of § 60.5390(b)(2).

(5) You must include the information in paragraph (d)(1) of this section and a listing of the pneumatic controller affected facilities specified in paragraphs (d)(2) and (3) of this section in the initial annual report submitted for your pneumatic controller affected facilities constructed, modified or reconstructed during the period covered by the annual report according to the requirements of § 60.5420(b).

(6) You must maintain the records as specified in § 60.5420(c)(4) for each pneumatic controller affected facility.

(e) To achieve initial compliance with the emission standards for your storage vessel affected facility you must comply with paragraphs (e)(1) through (9) of this section.

(1) You have determined the VOC emission rate within 30 days after startup for storage vessels constructed, modified or reconstructed at well sites with no other wells in production, and you must use good engineering practices to minimize emissions during the 30-day period.

(2) You must determine the VOC emission rate upon startup for storage vessels constructed, modified or reconstructed at well sites with one or more wells already in production.

(3) For storage vessel affected facilities emitting more than 6 tpy VOC, you must reduce VOC emissions by 95.0 percent or greater within 60 days after startup for storage vessels constructed, modified or reconstructed at well sites with no other wells in production, or upon startup for storage vessels constructed, modified or reconstructed at well sites with one or more wells already in production.

(4) If you use a control device to reduce emissions, you must equip the storage vessel with a cover that meets the requirements of § 60.5411(b) and is connected through a closed vent system that meets the requirements of § 60.5411(a) to a control device that meets the conditions specified in § 60.5412 within 60 days after startup for storage vessels constructed, modified or reconstructed at well sites with no other wells in production, or upon startup for storage vessels constructed, modified or reconstructed at well sites with one or more wells already in production.

(5) You must conduct an initial performance test as required in § 60.5413 within 180 days after initial startup or within 180 days of October 15, 2013, whichever is later, and must conduct the compliance demonstration in § 60.5415(b).

(6) You must conduct the initial inspections required in § 60.5416.

(7) You must install and operate continuous parameter monitoring systems in accordance with § 60.5417.

(8) You must submit the information in paragraphs (e)(1) through (7) of this section in the initial annual report as required in § 60.5420(b).

(9) You must maintain the records as specified in § 60.5420(c)(5) for each storage vessel affected facility.

(f) For affected facilities at onshore natural gas processing plants, initial compliance with the VOC requirements is demonstrated if you are in compliance with the requirements of § 60.5400.

(g) For sweetening unit affected facilities at onshore natural gas processing plants, initial compliance is demonstrated according to paragraphs (g)(1) through (3) of this section.

(1) To determine compliance with the standards for SO_2 specified in § 60.5405(a), during the initial performance test as required by § 60.8, the minimum required sulfur dioxide emission reduction efficiency (Z_i) is compared to the emission reduction efficiency (R) achieved by the sulfur recovery technology as specified in paragraphs (g)(1)(i) and (ii) of this section.

(i) If $R \geq Z_i$, your affected facility is in compliance.

(ii) If $R < Z_i$, your affected facility is not in compliance.

(2) The emission reduction efficiency (R) achieved by the sulfur reduction technology must be determined using the procedures in § 60.5406(c)(1).

(3) You have submitted the results of paragraphs (g)(1) and (2) of this section in the initial annual report submitted for your sweetening unit affected facilities at onshore natural gas processing plants.

§ 60.5411 What additional requirements must I meet to determine initial compliance for my closed vent systems routing materials from storage vessels and centrifugal compressor wet seal degassing systems?

You must meet the applicable requirements of this section for each cover and closed vent system used to comply with the emission standards for your storage vessel or centrifugal compressor affected facility.

(a) *Closed vent system requirements.* (1) You must design the closed vent system to route all gases, vapors, and fumes emitted from the material in the storage vessel or wet seal fluid degassing system to a control device that meets the requirements specified in § 60.5412.

(2) You must design and operate the closed vent system with no detectable emissions as demonstrated by § 60.5416(b).

(3) You must meet the requirements specified in paragraphs (a)(3)(i) and (ii) of this section if the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device.

(i) Except as provided in paragraph (a)(3)(ii) of this section, you must comply with either paragraph (a)(3)(i)(A) or (B) of this section for each bypass device.

(A) You must properly install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device to the atmosphere that is capable of taking periodic readings as specified in § 60.5416(a)(4) and sounds an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device to the atmosphere.

(B) You must secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

(ii) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of paragraph (a)(3)(i) of this section.

(b) *Cover requirements.* (1) The cover and all openings on the cover (e.g., access hatches, sampling ports, and gauge wells) shall form a continuous barrier over the entire surface area of the liquid in the storage vessel or wet seal fluid degassing system.

(2) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) whenever material is in the unit on which the cover is installed except during those times when it is necessary to use an opening as follows:

(i) To add material to, or remove material from the unit (this includes openings necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit);

(ii) To inspect or sample the material in the unit;

(iii) To inspect, maintain, repair, or replace equipment located inside the unit; or

(iv) To vent liquids, gases, or fumes from the unit through a closed-vent system to a control device designed and operated in accordance with the requirements of paragraph (a) of this section.

§ 60.5412 What additional requirements must I meet for determining initial compliance with control devices used to comply with the emission standards for my storage vessel or centrifugal compressor affected facility?

You must meet the applicable requirements of this section for each control device used to comply with the emission standards for your storage vessel or centrifugal compressor affected facility.

(a) If you use a control device to meet the emission reduction standard in § 60.5380(a)(1) for your centrifugal compressor or § 60.5395(a)(1) or (2) for your storage vessel, you must use one of the control devices specified in paragraphs (a)(1) through (3) of this section. You must demonstrate that the control device achieves the performance requirements using the performance test methods and procedures specified in § 60.5413.

(1) You must design and operate an enclosed combustion device (e.g., thermal vapor incinerator, catalytic vapor incinerator, boiler, or process heater) in accordance with one of the performance requirements specified in paragraphs (a)(1)(i) through (iv) of this section.

(i) You must reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater as determined in accordance with the requirements of § 60.5413.

(ii) You must reduce the concentration of TOC in the exhaust gases at the outlet to the device to a level equal to or less than 20 parts per million by volume on a dry basis corrected to 3 percent oxygen as determined in accordance with the requirements of § 60.5413.

(iii) You must operate at a minimum temperature of 760 °C for a control device that can demonstrate a uniform combustion zone temperature during the performance test conducted under § 60.5413.

(iv) If a boiler or process heater is used as the control device, then you must introduce the vent stream into the flame zone of the boiler or process heater.

(2) You must design and operate a vapor recovery device (e.g., carbon adsorption system or condenser) or other non-destructive control device to reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater as determined in accordance with the requirements of § 60.5413. The vapor recovery device must meet the design analysis requirements of § 60.5413(c).

(3) You must design and operate a flare in accordance with the requirements of § 60.5413.

(b) You must operate each control device in accordance with the requirements specified in paragraphs (b)(1) and (2) of this section.

(1) You must operate each control device used to comply with this subpart at all times when gases, vapors, and fumes are vented from the storage vessel affected facility, as required under § 60.5395, or wet seal fluid degassing system affected facility, as required under § 60.5380, through the closed vent system to the control device. You may vent more than one affected facility to a control device used to comply with this subpart.

(2) For each control device monitored in accordance with the requirements of § 60.5417, you must demonstrate compliance according to the requirements of § 60.5415(e)(2), as applicable.

(c) For each carbon adsorption system used as a control device to meet the requirements of paragraph (a)(2) of this section, you must manage the carbon in accordance with the requirements specified in paragraphs (c)(1) or (2) of this section.

(1) Following the initial startup of the control device, you must replace all carbon in the control device with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established according to § 60.5413(c)(2) or (3) for the carbon adsorption system. You must maintain records identifying the schedule for replacement and records of each carbon replacement as required in § 60.5420(c)(6).

(2) You must either regenerate, reactivate, or burn the spent carbon removed from the carbon adsorption system in one of the units specified in paragraphs (c)(2)(i) through (vii) of this section.

(i) Regenerate or reactivate the spent carbon in a thermal treatment unit for

which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart X.

(ii) Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with and operating air emission controls in accordance with this section.

(iii) Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with and operating organic air emission controls in accordance with an emissions standard for VOC under another subpart in 40 CFR part 60 or this part.

(iv) Burn the spent carbon in a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart O.

(v) Burn the spent carbon in a hazardous waste incinerator which you have designed and operated in accordance with the requirements of 40 CFR part 265, subpart O.

(vi) Burn the spent carbon in a boiler or industrial furnace for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 266, subpart H.

(vii) Burn the spent carbon in a boiler or industrial furnace that you have designed and operated in accordance with the interim status requirements of 40 CFR part 266, subpart H.

§ 60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?

This section applies to the performance testing of control devices used to demonstrate compliance with the emissions standards for your storage vessel or centrifugal compressor affected facility. You must demonstrate that a control device achieves the performance requirements of § 60.5412(a) using the performance test methods and procedures specified in paragraph (b) of this section. For condensers, you may use a design analysis as specified in paragraph (c) of this section in lieu of complying with paragraph (b) of this section.

(a) *Performance test exemptions.* You are exempt from the requirements to conduct performance tests and design analyses if you use any of the control devices described in paragraphs (a)(1) through (7) of this section.

(1) A flare that is designed and operated in accordance with § 60.18(b). You must conduct the compliance determination using Method 22 at 40 CFR part 60, appendix A–7, to determine visible emissions.

(2) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(3) A boiler or process heater into which the vent stream is introduced with the primary fuel or is used as the primary fuel.

(4) A boiler or process heater burning hazardous waste for which you have either been issued a final permit under 40 CFR part 270 and comply with the requirements of 40 CFR part 266, subpart H; or you have certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(5) A hazardous waste incinerator for which you have been issued a final permit under 40 CFR part 270 and comply with the requirements of 40 CFR part 264, subpart O; or you have certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(6) A performance test is waived in accordance with § 60.8(b).

(7) A control device that can be demonstrated to meet the performance requirements of § 60.5412(a) through a performance test conducted by the manufacturer, as specified in paragraph (d) of this section.

(b) *Test methods and procedures.* You must use the test methods and procedures specified in paragraphs (b)(1) through (5) of this section, as applicable, for each performance test conducted to demonstrate that a control device meets the requirements of § 60.5412(a). You must conduct the initial and periodic performance tests according to the schedule specified in paragraph (b)(5) of this section.

(1) You must use Method 1 or 1A at 40 CFR part 60, appendix A–1, as appropriate, to select the sampling sites specified in paragraphs (b)(1)(i) and (ii)

of this section. Any references to particulate mentioned in Methods 1 and 1A do not apply to this section.

(i) Sampling sites must be located at the inlet of the first control device, and at the outlet of the final control device, to determine compliance with the control device percent reduction requirement specified in §60.5412(a)(1)(i) or (a)(2).

(ii) The sampling site must be located at the outlet of the combustion device to determine compliance with the enclosed combustion device total TOC concentration limit specified in §60.5412(a)(1)(ii).

(2) You must determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D at 40 CFR part 60, appendix A–2, as appropriate.

(3) To determine compliance with the control device percent reduction performance requirement in §60.5412(a)(1)(i) or (a)(2), you must use Method 25A at 40 CFR part 60, appendix A–7. You must use the procedures in paragraphs (b)(3)(i) through (iv) of this section to calculate percent reduction efficiency.

(i) For each run, you must take either an integrated sample or a minimum of four grab samples per hour. If grab sampling is used, then the samples must be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) You must compute the mass rate of TOC (minus methane and ethane) using the equations and procedures specified in paragraphs (b)(3)(ii)(A) and (B) of this section.

(A) You must use the following equations:

$$E_i = K_2\left(\sum_{j=1}^{n} C_{ij}M_{ij}\right)Q_i$$

$$E_o = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_o$$

Where:

E_i, E_o = Mass rate of TOC (minus methane and ethane) at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

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 = Flowrate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

n = Number of components in sample.

(B) When calculating the TOC mass rate, you must sum all organic compounds (minus methane and ethane) measured by Method 25A at 40 CFR part 60, appendix A–7 using the equations in paragraph (b)(3)(ii)(A) of this section.

(iii) You must calculate the percent reduction in TOC (minus methane and ethane) as follows:

$$R_{cd} = \frac{E_i - E_o}{E_i} * 100\%$$

Where:

R_{cd} = Control efficiency of control device, percent.

E_i = Mass rate of TOC (minus methane and ethane) at the inlet to the control device as calculated under paragraph (b)(3)(ii) of this section, kilograms TOC per hour or kilograms HAP per hour.

E_o = Mass rate of TOC (minus methane and ethane) at the outlet of the control device, as calculated under paragraph (b)(3)(ii) of this section, kilograms TOC per hour per hour.

(iv) If the 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, you must determine the weight-percent reduction of total TOC (minus methane and ethane) across the device by comparing the TOC (minus methane and ethane) in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) exiting the device, respectively.

(4) You must use Method 25A at 40 CFR part 60, appendix A–7 to measure TOC (minus methane and ethane) to determine compliance with the enclosed combustion device total VOC concentration limit specified in § 60.5412(a)(1)(ii). You must calculate parts per million by volume concentration and correct to 3 percent oxygen, using the procedures in paragraphs (b)(4)(i) through (iii) of this section.

(i) For each run, you must take either an integrated sample or a minimum of four grab samples per hour. If grab sampling is used, then the samples must be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) You must calculate the TOC concentration for each run as follows:

$$C_{TOC} = \sum_{i=1}^{x} \frac{\left(\sum_{j=i}^{n} C_{ji}\right)}{x}$$

Where:

C_{TOC} = Concentration of total organic compounds minus methane and ethane, dry basis, parts per million by volume.

C_{ji} = Concentration of sample component 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.

(iii) You must correct the TOC concentration to 3 percent oxygen as specified in paragraphs (b)(4)(iii)(A) and (B) of this section.

(A) You must use the emission rate correction factor for excess air, integrated sampling and analysis procedures of Method 3A or 3B at 40 CFR part 60, appendix A, ASTM D6522–00 (Reapproved 2005), or ANSI/ASME PTC 19.10–1981, Part 10 (manual portion only) (incorporated by reference as specified in § 60.17) to determine the oxygen concentration. The samples must be taken during the same time that the samples are taken for determining TOC concentration.

(B) You must correct the TOC concentration for percent oxygen as follows:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2d}}\right)$$

Where:

C_c = TOC concentration corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m = TOC concentration, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percent by volume.

(5) You must conduct performance tests according to the schedule specified in paragraphs (b)(5)(i) and (ii) of this section.

(i) You must conduct an initial performance test within 180 days after initial startup for your affected facility. You must submit the performance test results as required in §60.5420(b)(7).

(ii) You must conduct periodic performance tests for all control devices required to conduct initial performance tests except as specified in paragraphs (b)(5)(ii)(A) and (B) of this section. You must conduct the first periodic performance test no later than 60 months after the initial performance test required in paragraph (b)(5)(i) of this section. You must conduct subsequent periodic performance tests at intervals no longer than 60 months following the previous periodic performance test or whenever you desire to establish a new operating limit. You must submit the periodic performance test results as specified in §60.5420(b)(7). Combustion control devices meeting the criteria in either paragraph (b)(5)(ii)(A) or (B) of this section are not required to conduct periodic performance tests.

(A) A control device whose model is tested under, and meets the criteria of paragraph (d) of this section.

(B) A combustion control device tested under paragraph (b) of this section that meets the outlet TOC performance level specified in §60.5412(a)(1)(ii) and that establishes a correlation between firebox or combustion chamber temperature and the TOC performance level.

(c) *Control device design analysis to meet the requirements of §60.5412(a).* (1) For a condenser, the design analysis must include an analysis of the vent stream composition, constituent concentrations, flowrate, relative humidity, and temperature, and must 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.

(2) For a regenerable carbon adsorption system, the design analysis shall include the vent stream composition, constituent concentrations, flowrate, 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 the 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 the carbon.

(3) For a nonregenerable carbon adsorption system, such as a carbon canister, the design analysis shall include the vent stream composition, constituent concentrations, flowrate, 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 source operating schedule. In addition, these systems will incorporate dual carbon canisters in case of emission breakthrough occurring in one canister.

(4) If you and the Administrator do not agree on a demonstration of control device performance using a design analysis, then you must perform a performance test in accordance with the requirements of paragraph (b) of this section to resolve the disagreement. The Administrator may choose to have an authorized representative observe the performance test.

(d) *Performance testing for combustion control devices—manufacturers' performance test.* The manufacturer must demonstrate that a specific model of combustion control device achieves the performance requirements in paragraph (d)(1) of this section by conducting a performance test as specified in paragraphs (d)(2) through (8) of this section. You must submit a test report for each combustion control device in

accordance with the requirements in paragraphs (d)(9) of this section.

(1) The manufacturer must meet the performance test criteria in paragraphs (d)(1)(i) through (iii) of this section.

(i) The control device model tested must meet the emission levels in paragraphs (d)(1)(i)(A) through (C) of this section.

(A) Method 22 at 40 CFR part 60, appendix A–7, results under paragraph (d)(6)(iv) of this section with no indication of visible emissions.

(B) Average Method 25A at 40 CFR part 60, appendix A–7, results under paragraph (d)(8) of this section equal to or less than 10.0 parts per million by volume-wet THC as propane corrected to 3.0 percent carbon dioxide, and

(C) Average carbon monoxide emissions determined under paragraph (d)(6)(iii) of this section equal to or less than 10 parts per million by volume-dry, corrected to 3.0 percent carbon dioxide.

(ii) The manufacturer must determine a maximum inlet gas flow rate, which must not be exceeded for each control device model to achieve the criteria in paragraph (d)(1)(i) of this section.

(iii) A control device meeting the emission levels in paragraph (d)(1)(i)(A) through (C) of this section must demonstrate a minimum destruction efficiency of 95.0 percent for VOC regulated under this subpart.

(2) Performance testing must consist of three one-hour (or longer) test runs for each of the four firing rate settings in paragraphs (d)(2)(i) through (iv) of this section, making a total of 12 test runs per test. The manufacturer must use propene (propylene) gas for the testing fuel. An independent third-party laboratory (not affiliated with the control device manufacturer or fuel supplier) must perform all fuel analyses.

(i) 90–100 percent of maximum design rate (fixed rate).

(ii) 70–100–70 percent (ramp up, ramp down). Begin the test at 70 percent of the maximum design rate. Within the first 5 minutes, ramp up the firing rate to 100 percent of the maximum design rate. Hold at 100 percent for 5 minutes. In the 10–15 minute time range, ramp back down to 70 percent of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(iii) 30–70–30 percent (ramp up, ramp down). Begin the test at 30 percent of the maximum design rate. Within the first 5 minutes, ramp up the firing rate to 70 percent of the maximum design rate. Hold at 70 percent for 5 minutes. In the 10–15 minute time range, ramp back down to 30 percent of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(iv) 0–30–0 percent (ramp up, ramp down). Begin the test at 0 percent of the maximum design rate. Within the first 5 minutes, ramp up the firing rate to 100 percent of the maximum design rate. Hold at 30 percent for 5 minutes. In the 10–15 minute time range, ramp back down to 0 percent of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(3) The manufacturer must test all models employing multiple enclosures simultaneously and with all burners operational. The manufacturer must report results for each enclosure individually and for the average of the emissions from all interconnected combustion enclosures/chambers. Control device operating data must be collected continuously throughout the performance test using an electronic Data Acquisition System and strip chart. The manufacturer must submit data with the test report in accordance with paragraph (d)(9) of this section.

(4) The manufacturer must conduct inlet testing as specified in paragraphs (d)(4)(i) through (iii) of this section.

(i) The fuel flow metering system must be located in accordance with Method 2A at 40 CFR part 60, appendix A–1, (or other approved procedure) to measure fuel flow rate at the control device inlet location. You must position the fitting for filling fuel sample containers a minimum of eight pipe diameters upstream of any inlet fuel flow monitoring meter.

(ii) The manufacturer must determine the inlet flow rate using Method 2A at 40 CFR part 60, appendix A–1. Record the start and stop reading for each 60-minute THC test. Record the gas pressure and temperature at 5-

minute intervals throughout each 60-minute THC test.

(iii) The manufacturer must conduct inlet fuel sampling in accordance with the criteria in paragraph (d)(5) of this section.

(5) The manufacturer must conduct inlet fuel sampling as specified in paragraphs (d)(5)(i) and (ii) of this section.

(i) At the inlet fuel sampling location, the manufacturer must securely connect a Silonite-coated stainless steel evacuated canister fitted with a flow controller sufficient to fill the canister over a 1 hour period. Filling must be conducted as specified in paragraphs (d)(5)(i)(A) through (C) of this section.

(A) Open the canister sampling valve at the beginning of the total hydrocarbon test, and close the canister at the end of the total hydrocarbon test.

(B) Fill one canister for each total hydrocarbon test run.

(C) Label the canisters individually and record on a chain of custody form.

(ii) The manufacturer must analyze each fuel sample using the methods in paragraphs (d)(5)(ii)(A) through (D) of this section. You must include the results in the test report in paragraph (d)(9) of this section.

(A) Hydrocarbon compounds containing between one and five atoms of carbon plus benzene using ASTM D1945–03 (Reapproved 2010) (incorporated by reference as specified in §60.17).

(B) Hydrogen (H_2), carbon monoxide (CO), carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2) using ASTM D1945–03 (Reapproved 2010) (incorporated by reference as specified in §60.17).

(C) Carbonyl sulfide, carbon disulfide plus mercaptans using ASTM D5504–08 (incorporated by reference as specified in §60.17).

(D) Higher heating value using ASTM D3588–98 (Reapproved 2003) or ASTM D4891–89 (Reapproved 2006) (incorporated by reference as specified in §60.17).

(6) The manufacturer must conduct outlet testing in accordance with the criteria in paragraphs (d)(6)(i) through (iv) and (d)(7) of this section.

(i) The manufacturer must sample and measure flowrate in accordance with the following:

(A) The manufacturer must position the outlet sampling location a minimum of four equivalent stack diameters downstream from the highest peak flame or any other flow disturbance, and a minimum of one equivalent stack diameter upstream of the exit or any other flow disturbance. A minimum of two sample ports must be used.

(B) The manufacturer must measure flow rate using Method 1 at 40 CFR part 60, appendix A–1 for determining flow measurement traverse point location, and Method 2 at 40 CFR part 60, appendix A–1 for measuring duct velocity. If low flow conditions are encountered (*i.e.*, velocity pressure differentials less than 0.05 inches of water) during the performance test, a more sensitive manometer must be used to obtain an accurate flow profile.

(ii) The manufacturer must determine molecular weight as specified in paragraph (d)(7) of this section.

(iii) The manufacturer must determine carbon monoxide using Method 10 at 40 CFR part 60, appendix A–4 or ASTM D6522–00 (Reapproved 2005) (incorporated by reference as specified in §60.17). The manufacturer must run the test at the same time and with the sample points used for the Method 25A at 40 CFR part 60, appendix A–7, testing. An instrument range of 0–10 parts per million by volume-dry (ppmvd) must be used.

(iv) The manufacturer must determine visible emissions using Method 22 at 40 CFR part 60, appendix A–7. The test must be performed continuously during each test run. A digital color photograph of the exhaust point, taken from the position of the observer and annotated with date and time, will be taken once per test run and the four photos included in the test report.

(7) The manufacturer must determine molecular weight as specified in paragraphs (d)(7)(i) and (ii) of this section.

(i) The manufacturer must collect an integrated bag sample during the Method 4 at 40 CFR part 60, appendix A–3, moisture test. The manufacturer must analyze the bag sample using a gas chromatograph-thermal conductivity detector (GC–TCD) analysis meeting the criteria in paragraphs (d)(7)(i)(A) through (D) of this section.

(A) Collect the integrated sample throughout the entire test, and collect representative volumes from each traverse location.

(B) Purge the sampling line with stack gas before opening the valve and beginning to fill the bag.

(C) Knead or otherwise vigorously mix the bag contents prior to the gas chromatograph analysis.

(D) Modify the gas chromatograph-thermal conductivity detector calibration procedure in Method 3C at 40 CFR part 60, appendix A–2 by using EPA Alt–045 as follows: For the initial calibration, triplicate injections of any single concentration must agree within 5 percent of their mean to be valid. The calibration response factor for a single concentration re-check must be within 10 percent of the original calibration response factor for that concentration. If this criterion is not met, repeat the initial calibration using at least three concentration levels.

(ii) The manufacturer must report the molecular weight of oxygen, carbon dioxide, methane, and nitrogen and include in the test report submitted under § 60.5420(b)(7). The manufacturer must determine moisture using Method 4 at 40 CFR part 60, appendix A–3. Traverse both ports with the Method 4 at 40 CFR part 60, appendix A–3, sampling train during each test run. The manufacturer must not introduce ambient air into the Method 3C at 40 CFR part 60, appendix A–2, integrated bag sample during the port change.

(8) The manufacturer must determine total hydrocarbons as specified by the criteria in paragraphs (d)(8)(i) through (vii) of this section.

(i) Conduct THC sampling using Method 25A at 40 CFR part 60, appendix A–7, except the option for locating the probe in the center 10 percent of the stack is not allowed. The THC probe must be traversed to 16.7 percent, 50 percent, and 83.3 percent of the stack diameter during the testing.

(ii) A valid test must consist of three Method 25A at 40 CFR part 60, appendix A–7, tests, each no less than 60 minutes in duration.

(iii) A 0–10 parts per million by volume-wet (ppmvw) (as propane) measurement range is preferred; as an alternative a 0–30 ppmvw (as carbon) measurement range may be used.

(iv) Calibration gases will be propane in air and be certified through EPA Protocol 1—''EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards,'' September 1997, as amended August 25, 1999, EPA–600/R–97/121.

(v) THC measurements must be reported in terms of ppmvw as propane.

(vi) THC results must be corrected to 3 percent CO_2, as measured by Method 3C at 40 CFR part 60, appendix A–2.

(vii) Subtraction of methane/ethane from the THC data is not allowed in determining results.

(9) For each combustion control device model tested by the manufacturer under this section, you must maintain records of the information listed in paragraphs (d)(9)(i) through (vi) of this section.

(i) A full schematic of the control device and dimensions of the device components.

(ii) The design net heating value (minimum and maximum) of the device.

(iii) The test fuel gas flow range (in both mass and volume). Include the minimum and maximum allowable inlet gas flow rate.

(iv) The air/stream injection/assist ranges, if used.

(v) The test parameter ranges listed in paragraphs (d)(9)(v)(A) through (O) of this section, as applicable for the tested model.

(A) Fuel gas delivery pressure and temperature.

(B) Fuel gas moisture range.

(C) Purge gas usage range.

(D) Condensate (liquid fuel) separation range.

(E) Combustion zone temperature range. This is required for all devices that measure this parameter.

(F) Excess combustion air range.

(G) Flame arrestor(s).

(H) Burner manifold pressure.

(I) Pilot flame sensor.

(J) Pilot flame design fuel and fuel usage.

(K) Tip velocity range.

(L) Momentum flux ratio.

(M) Exit temperature range.

(N) Exit flow rate.

(O) Wind velocity and direction.

(vi) You must include all calibration quality assurance/quality control data, calibration gas values, gas cylinder certification, and strip charts annotated with test times and calibration values in the test report.

§60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?

(a) For each gas well affected facility, you must demonstrate continuous compliance by submitting the reports required by §60.5420(b) and maintaining the records for each completion operation specified in §60.5420(c)(1).

(b) For each centrifugal compressor affected facility, you must demonstrate continuous compliance according to paragraphs (b)(1) and (2) of this section.

(1) You must reduce VOC emissions from the wet seal fluid degassing system by 95.0 percent or greater.

(2) If you use a control device to reduce emissions, you must demonstrate continuous compliance according to paragraph (e)(2) of this section.

(3) You must submit the annual report required by 60.5420(b) and maintain the records as specified in §60.5420(c)(2).

(c) For each reciprocating compressor affected facility, you must demonstrate continuous compliance according to paragraphs (c)(1) through (3) of this section.

(1) You must continuously monitor the number of hours of operation for each reciprocating compressor affected facility or track the number of months since initial startup, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

(2) You must submit the annual report as required in §60.5420(b) and maintain records as required in §60.5420(c)(3).

(3) You must replace the reciprocating compressor rod packing before the total number of hours of operation reaches 26,000 hours or the number of months since the most recent rod packing replacement reaches 36 months.

(d) For each pneumatic controller affected facility, you must demonstrate continuous compliance according to paragraphs (d)(1) through (3) of this section.

(1) You must continuously operate the pneumatic controllers as required in §60.5390(a), (b), or (c).

(2) You must submit the annual report as required in §60.5420(b).

(3) You must maintain records as required in §60.5420(c)(4).

(e) For each storage vessel affected facility for which the VOC emissions are greater than 6 tpy, you must demonstrate continuous compliance according to paragraphs (e)(1) and (2) of this section.

(1) You must reduce VOC emissions from each storage vessel are reduced by 95.0 percent or greater.

(2) If you use a control device to reduce VOC emissions, you must demonstrate continuous compliance with the performance requirements of §60.5412(a)(2) using the procedure specified in paragraphs (e)(2)(i) through (vii) of this section. If you use a condenser as the control device to achieve the requirements specified in §60.5412(a)(2), you may demonstrate compliance according to paragraph (e)(2)(viii) of this section. You may switch between compliance with paragraphs (e)(2)(i) through (vii) of this section and compliance with paragraph (e)(2)(viii) of this section only after at least 1 year of operation in compliance with the selected approach. You must provide notification of such a change in the compliance method in the next Annual Report, as required in §60.5420(b), following the change.

(i) You must operate below (or above) the site specific maximum (or minimum) parameter value established according to the requirements of §60.5417(f)(1).

(ii) You must calculate the daily average of the applicable monitored parameter in accordance with §60.5417(e) except that the inlet gas flow rate to the control device must not be averaged.

(iii) Compliance with the operating parameter limit is achieved when the

daily average of the monitoring parameter value calculated under paragraph (e)(2)(ii) of this section is either equal to or greater than the minimum monitoring value or equal to or less than the maximum monitoring value established under paragraph (e)(2)(i) of this section. When performance testing of a combustion control device is conducted by the device manufacturer as specified in § 60.5413(d), compliance with the operating parameter limit is achieved when the inlet gas flow rate is equal to or less than the value established under § 60.5413(d)(1)(ii).

(iv) You must operate the continuous monitoring system required in § 60.5417 at all times the affected source is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments). A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.

(v) You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other required data collection periods to assess the operation of the control device and associated control system.

(vi) Failure to collect required data is a deviation of the monitoring requirements, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments).

(vii) If you use a combustion control device to meet the requirements of § 60.5412(a), you must demonstrate compliance by installing a device tested under the provisions in § 60.5413(d) and complying with the criteria in paragraphs (e)(2)(vii)(A) through (D) of this section.

(A) The inlet gas flow rate must meet the range specified by the manufacturer. You must measure the flow rate as specified in § 60.5417(d)(1)(viii)(A).

(B) A pilot flame must be present at all times of operation. You must monitor the pilot flame in accordance with § 60.5417(d)(1)(viii)(B).

(C) You must operate the combustion control device with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. You must perform a visible emissions test using Method 22 at 40 CFR part 60, appendix A–7 monthly. The observation period must be 2 hours and must follow Method 22.

(D) Compliance with the operating parameter limit is achieved when the criteria in paragraphs (e)(2)(vii)(D)(*1*) through (*5*) are met.

(*1*) The inlet gas flow rate monitored under paragraph (e)(2)(vii)(A) of this section is equal to or below the maximum established by the manufacturer.

(*2*) The pilot flame is present at all times; and

(*3*) During the visible emissions test performed under paragraph (e)(2)(vii)(C) of this section, the duration of visible emissions does not exceed a total of 5 minutes during the observation period. Devices failing the visible emissions test must follow the requirements in paragraphs (e)(2)(vii)(D)(*4*) and (*5*) of this section.

(*4*) Following the first failure, you must replace the fuel nozzle(s) and burner tubes.

(*5*) If, following replacement of the fuel nozzle(s) and burner tubes as specified in paragraph (e)(2)(vii)(D)(*4*) of this section, the visible emissions test is not passed in the next scheduled test, you must either conduct a performance test as specified in § 60.5413, or replace the device with another control device whose model was tested and meets the requirements in § 60.5413(d).

(viii) If you use a condenser as the control device to achieve the percent reduction performance requirements specified in §60.5412(a)(2), you must demonstrate compliance using the procedures in paragraphs (e)(2)(viii)(A) through (E) of this section.

(A) You must establish a site-specific condenser performance curve according to §60.5417(f)(2).

(B) You must calculate the daily average condenser outlet temperature in accordance with §60.5417(e).

(C) You must determine the condenser efficiency for the current operating day using the daily average condenser outlet temperature calculated under paragraph (e)(2)(viii)(B) of this section and the condenser performance curve established under paragraph (e)(2)(viii)(A) of this section.

(D) Except as provided in paragraphs (e)(2)(viii)(D)(*1*) and (*2*) of this section, at the end of each operating day, you must calculate the 365-day rolling average TOC emission reduction, as appropriate, from the condenser efficiencies as determined in paragraph (e)(2)(viii)(C) of this section.

(*1*) After the compliance dates specified in §60.5370, if you have less than 120 days of data for determining average TOC emission reduction, you must calculate the average TOC emission reduction for the first 120 days of operation after the compliance dates. You have demonstrated compliance with the overall 95.0 percent reduction requirement if the 120-day average TOC emission reduction is equal to or greater than 95.0 percent.

(*2*) After 120 days and no more than 364 days of operation after the compliance date specified in §60.5370, you must calculate the average TOC emission reduction as the TOC emission reduction averaged over the number of days between the current day and the applicable compliance date. You have demonstrated compliance with the overall 95.0 percent reduction requirement, if the average TOC emission reduction is equal to or greater than 95.0 percent.

(E) If you have data for 365 days or more of operation, you have demonstrated compliance with the TOC emission reduction if the rolling 365-day average TOC emission reduction calculated in paragraph (e)(2)(viii)(D) of this section is equal to or greater than 95.0 percent.

(f) For affected facilities at onshore natural gas processing plants, continuous compliance with VOC requirements is demonstrated if you are in compliance with the requirements of §60.5400.

(g) For each sweetening unit affected facility at onshore natural gas processing plants, you must demonstrate continuous compliance with the standards for SO_2 specified in §60.5405(b) according to paragraphs (g)(1) and (2) of this section.

(1) The minimum required SO_2 emission reduction efficiency (Z_c) is compared to the emission reduction efficiency (R) achieved by the sulfur recovery technology.

(i) If $R \geq Z_c$, your affected facility is in compliance.

(ii) If $R < Z_c$, your affected facility is not in compliance.

(2) The emission reduction efficiency (R) achieved by the sulfur reduction technology must be determined using the procedures in §60.5406(c)(1).

(h) *Affirmative defense for violations of emission standards during malfunction.* In response to an action to enforce the standards set forth in §§60.5375, 60.5380, 60.5385, 60.5390, 60.5395, 60.5400, and 60.5405, you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at §60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in §60.5420(a), and must prove by a preponderance of evidence that:

(i) The violation:

(A) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design

or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(iv) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(2) Report. The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (h)(1) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

§ 60.5416 What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my storage vessel and centrifugal compressor affected facility?

For each closed vent system or cover at your storage vessel or centrifugal compressor affected facility, you must comply with the requirements of paragraphs (a) through (g) of this section.

(a) *Inspections.* Except as provided in paragraphs (e) and (f) of this section, you must inspect each closed vent system according to the procedures and schedule specified in paragraphs (a)(1) and (2) of this section, inspect each cover according to the procedures and schedule specified in paragraph (a)(3) of this section, and inspect each bypass device according to the procedures of paragraph (a)(4) of this section.

(1) For each closed vent system joint, seam, or other connection that is permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange), you must meet the requirements specified in paragraphs (a)(1)(i) and (ii) of this section.

(i) Conduct an initial inspection according to the test methods and procedures specified in paragraph (b) of this section to demonstrate that the closed vent system operates with no detectable emissions. You must maintain records of the inspection results as specified in § 60.5420(c)(6).

(ii) Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; or broken or missing caps or other closure

devices. You must monitor a component or connection using the test methods and procedures in paragraph (b) of this section to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced or the connection is unsealed. You must maintain records of the inspection results as specified in §60.5420(c)(6).

(2) For closed vent system components other than those specified in paragraph (a)(1) of this section, you must meet the requirements of paragraphs (a)(2)(i) through (iii) of this section.

(i) Conduct an initial inspection according to the test methods and procedures specified in paragraph (b) of this section to demonstrate that the closed vent system operates with no detectable emissions. You must maintain records of the inspection results as specified in §60.5420(c)(6).

(ii) Conduct annual inspections according to the test methods and procedures specified in paragraph (b) of this section to demonstrate that the components or connections operate with no detectable emissions. You must maintain records of the inspection results as specified in §60.5420(c)(6).

(iii) Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork; loose connections; or broken or missing caps or other closure devices. You must maintain records of the inspection results as specified in §60.5420(c)(6).

(3) For each cover, you must meet the requirements in paragraphs (a)(3)(i) and (ii) of this section.

(i) Conduct visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover, or between the cover 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. In the case where the storage vessel is buried partially or entirely underground, you must inspect only those portions of the cover that extend to or above the ground surface, and those connections that are on such portions of the cover (e.g., fill ports, access hatches, gauge wells, etc.) and can be opened to the atmosphere.

(ii) You must initially conduct the inspections specified in paragraph (a)(3)(i) of this section following the installation of the cover. Thereafter, you must perform the inspection at least once every calendar year, except as provided in paragraphs (e) and (f) of this section. You must maintain records of the inspection results as specified in §60.5420(c)(7).

(4) For each bypass device, except as provided for in §60.5411, you must meet the requirements of paragraphs (a)(4)(i) or (ii) of this section.

(i) Set the flow indicator to take a reading at least once every 15 minutes at the inlet to the bypass device that could divert the steam away from the control device to the atmosphere.

(ii) If the bypass device valve installed at the inlet to the bypass device is secured in the non-diverting position using a car-seal or a lock-and-key type configuration, visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass device. You must maintain records of the inspections according to §60.5420(c)(8).

(b) *No detectable emissions test methods and procedures.* If you are required to conduct an inspection of a closed vent system or cover at your storage vessel or centrifugal compressor affected facility as specified in paragraphs (a)(1), (2), or (3) of this section, you must meet the requirements of paragraphs (b)(1) through (13) of this section.

(1) You must conduct the no detectable emissions test procedure in accordance with Method 21 at 40 CFR part 60, appendix A–7.

(2) The detection instrument must meet the performance criteria of Method 21 at 40 CFR part 60, appendix A–7, except that the instrument response factor criteria in section 3.1.2(a) of Method 21 must be for the average composition of the fluid and not for each individual organic compound in the stream.

(3) You must calibrate the detection instrument before use on each day of its use by the procedures specified in

Method 21 at 40 CFR part 60, appendix A–7.

(4) Calibration gases must be as specified in paragraphs (b)(4)(i) and (ii) of this section.

(i) Zero air (less than 10 parts per million by volume hydrocarbon in air).

(ii) A mixture of methane in air at a concentration less than 10,000 parts per million by volume.

(5) You may choose to adjust or not adjust the detection instrument readings to account for the background organic concentration level. If you choose to adjust the instrument readings for the background level, you must determine the background level value according to the procedures in Method 21 at 40 CFR part 60, appendix A–7.

(6) Your detection instrument must meet the performance criteria specified in paragraphs (b)(6)(i) and (ii) of this section.

(i) Except as provided in paragraph (b)(6)(ii) of this section, the detection instrument must meet the performance criteria of Method 21 at 40 CFR part 60, appendix A–7, except the instrument response factor criteria in section 3.1.2(a) of Method 21 must be for the average composition of the process fluid, not each individual volatile organic compound in the stream. For process streams that contain nitrogen, air, or other inerts that are not organic hazardous air pollutants or volatile organic compounds, you must calculate the average stream response factor on an inert-free basis.

(ii) If no instrument is available that will meet the performance criteria specified in paragraph (b)(6)(i) of this section, you may adjust the instrument readings by multiplying by the average response factor of the process fluid, calculated on an inert-free basis, as described in paragraph (b)(6)(i) of this section.

(7) You must determine if a potential leak interface operates with no detectable emissions using the applicable procedure specified in paragraph (b)(7)(i) or (ii) of this section.

(i) If you choose not to adjust the detection instrument readings for the background organic concentration level, then you must directly compare the maximum organic concentration value measured by the detection instrument to the applicable value for the potential leak interface as specified in paragraph (b)(8) of this section.

(ii) If you choose to adjust the detection instrument readings for the background organic concentration level, you must compare the value of the arithmetic difference between the maximum organic concentration value measured by the instrument and the background organic concentration value as determined in paragraph (b)(5) of this section with the applicable value for the potential leak interface as specified in paragraph (b)(8) of this section.

(8) A potential leak interface is determined to operate with no detectable organic emissions if the organic concentration value determined in paragraph (b)(7) of this section is less than 500 parts per million by volume.

(9) *Repairs*. In the event that a leak or defect is detected, you must repair the leak or defect as soon as practicable according to the requirements of paragraphs (b)(9)(i) and (ii) of this section, except as provided in paragraph (d) of this section.

(i) A first attempt at repair must be made no later than 5 calendar days after the leak is detected.

(ii) Repair must be completed no later than 15 calendar days after the leak is detected.

(10) *Delay of repair*. Delay of repair of a closed vent system or cover for which leaks or defects have been detected is allowed if the repair is technically infeasible without a shutdown, or if you determine that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. You must complete repair of such equipment by the end of the next shutdown.

(11) *Unsafe to inspect requirements*. You may designate any parts of the closed vent system or cover as unsafe to inspect if the requirements in paragraphs (e)(1) and (2) of this section are met. Unsafe to inspect parts are exempt from the inspection requirements of paragraphs (a)(1) through (3) of this section.

(A) You determine 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 (a)(1), (2), or (3) of this section.

(B) You have a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(12) *Difficult to inspect requirements.* You may designate any parts of the closed vent system or cover as difficult to inspect, if the requirements in paragraphs (b)(12)(i) and (ii) of this section are met. Difficult to inspect parts are exempt from the inspection requirements of paragraphs (a)(1) through (3) of this section.

(i) You determine that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface.

(ii) You have a written plan that requires inspection of the equipment at least once every 5 years.

(13) *Records.* Records shall be maintained as specified in this section and in § 60.5420(c)(9).

§ 60.5417 What are the continuous control device monitoring requirements for my storage vessel or centrifugal compressor affected facility?

You must meet the applicable requirements of this section to demonstrate continuous compliance for each control device used to meet emission standards for your storage vessel or centrifugal compressor affected facility.

(a) You must install and operate a continuous parameter monitoring system for each control device as specified in paragraphs (c) through (j) of this section, except as provided for in paragraph (b) of this section. If you install and operate a flare in accordance with § 60.5412(a)(3), you are exempt from the requirements of paragraphs (e) and (f) of this section.

(b) You are exempt from the monitoring requirements specified in paragraphs (c) through (j) of this section for the control devices listed in paragraphs (b)(1) and (2) of this section.

(1) A boiler or process heater in which all vent streams are introduced with the primary fuel or is used as the primary fuel.

(2) A boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts.

(c) You must design and operate the continuous monitoring system so that a determination can be made on whether the control device is achieving the applicable performance requirements of § 60.5412. For each continuous parameter monitoring system, you must meet the specifications and requirements in paragraphs (c)(1) through (4) of this section.

(1) Each continuous parameter monitoring system must measure data values at least once every hour and record the parameters in paragraphs (c)(1)(i) or (ii) of this section.

(i) Each measured data value.

(ii) Each block average value for each 1-hour period 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.

(2) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (c)(2)(i) through (v) of this section. You must install, calibrate, operate, and maintain each continuous parameter monitoring system in accordance with the procedures in your approved site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations.

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements.

(iii) Equipment performance checks, system accuracy audits, or other audit procedures.

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 60.13(b).

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 60.7(c), (d), and (f).

(3) You must conduct the continuous parameter monitoring system equipment performance checks, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least once every 12 months.

(4) You must conduct a performance evaluation of each continuous parameter monitoring system in accordance with the site-specific monitoring plan.

(d) You must install, calibrate, operate, and maintain a device equipped with a continuous recorder to measure the values of operating parameters appropriate for the control device as specified in either paragraph (d)(1), (2), or (3) of this section.

(1) A continuous monitoring system that measures the operating parameters in paragraphs (d)(1)(i) through (viii) of this section, as applicable.

(i) For a thermal vapor incinerator that demonstrates during the performance test conducted under § 60.5413 that combustion zone temperature is an accurate indicator of performance, a temperature monitoring device equipped with a continuous recorder. The monitoring device must have a minimum accuracy of ±1 percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater. You must install the temperature sensor at a location representative of the combustion zone temperature.

(ii) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device must be capable of monitoring temperature at two locations and have a minimum accuracy of ±1 percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater. You must install one temperature sensor in the vent stream at the nearest feasible point to the catalyst bed inlet, and you must install a second temperature sensor in the vent stream at the nearest feasible point to the catalyst bed outlet.

(iii) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

(iv) For a boiler or process heater, a temperature monitoring device equipped with a continuous recorder. The temperature monitoring device must have a minimum accuracy of ±1 percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater. You must install the temperature sensor at a location representative of the combustion zone temperature.

(v) For a condenser, a temperature monitoring device equipped with a continuous recorder. The temperature monitoring device must have a minimum accuracy of ±1 percent of the temperature being monitored in °C, or ±2.8 °C, whichever value is greater. You must install the temperature sensor at a location in the exhaust vent stream from the condenser.

(vi) For a regenerative-type carbon adsorption system, a continuous monitoring system that meets the specifications in paragraphs (d)(1)(vi)(A) and (B) of this section.

(A) The continuous parameter monitoring system must measure and record the average total regeneration stream mass flow or volumetric flow during each carbon bed regeneration cycle. The flow sensor must have a measurement sensitivity of 5 percent of the flow rate or 10 cubic feet per minute, whichever is greater. You must check the mechanical connections for leakage at least every month, and you must perform a visual inspection at least every 3 months of all components of the flow continuous parameter monitoring system for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if your flow continuous parameter monitoring system is not equipped with a redundant flow sensor; and

(B) The continuous parameter monitoring system must measure and record the average carbon bed temperature for the duration of the carbon bed steaming cycle and measure the actual carbon bed temperature after regeneration and within 15 minutes of completing the cooling cycle. The temperature monitoring device must have a minimum accuracy of ±1 percent of the temperature being monitored in °C, or ±2.5 °C, whichever value is greater.

(vii) For a nonregenerative-type carbon adsorption system, you must monitor the design carbon replacement interval established using a performance

test performed as specified in §60.5413(b). The design carbon replacement interval must be based on the total carbon working capacity of the control device and source operating schedule.

(viii) For a combustion control device whose model is tested under §60.5413(d), a continuous monitoring system meeting the requirements of paragraphs (d)(1)(viii)(A) and (B) of this section.

(A) The continuous monitoring system must measure gas flow rate at the inlet to the control device. The monitoring instrument must have an accuracy of ±2 percent or better.

(B) A heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

(2) 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. The monitor must meet the requirements of Performance Specification 8 or 9 of 40 CFR part 60, appendix B. You must install, calibrate, and maintain the monitor according to the manufacturer's specifications.

(3) A continuous monitoring system that measures operating parameters other than those specified in paragraph (d)(1) or (2) of this section, upon approval of the Administrator as specified in §60.13(i).

(e) You must calculate the daily average value for each monitored operating parameter for each operating day, using the data recorded by the monitoring system, except for inlet gas flow rate. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average.

(f) For each operating parameter monitor installed in accordance with the requirements of paragraph (d) of this section, you must comply with paragraph (f)(1) of this section for all control devices. When condensers are installed, you must also comply with paragraph (f)(2) of this section.

(1) You must establish a minimum operating parameter value or a maximum operating parameter value, as appropriate for the control device, to define the conditions at which the control device must be operated to continuously achieve the applicable performance requirements of §60.5412(a). You must establish each minimum or maximum operating parameter value as specified in paragraphs (f)(1)(i) through (iii) of this section.

(i) If you conduct performance tests in accordance with the requirements of §60.5413(b) to demonstrate that the control device achieves the applicable performance requirements specified in §60.5412(a), then you must establish the minimum operating parameter value or the maximum operating parameter value based on values measured during the performance test and supplemented, as necessary, by a condenser design analysis or control device manufacturer recommendations or a combination of both.

(ii) If you use a condenser design analysis in accordance with the requirements of §60.5413(c) to demonstrate that the control device achieves the applicable performance requirements specified in §60.5412(a), then you must establish the minimum operating parameter value or the maximum operating parameter value based on the condenser design analysis and supplemented, as necessary, by the condenser manufacturer's recommendations.

(iii) If you operate a control device where the performance test requirement was met under §60.5413(d) to demonstrate that the control device achieves the applicable performance requirements specified in §60.5412(a), then you must establish the maximum inlet gas flow rate based on the performance test and supplemented, as necessary, by the manufacturer recommendations.

(2) If you use a condenser as specified in paragraph (d)(1)(v) of this section,

you must establish a condenser performance curve showing the relationship between condenser outlet temperature and condenser control efficiency, according to the requirements of paragraphs (f)(2)(i) and (ii) of this section.

(i) If you conduct a performance test in accordance with the requirements of § 60.5413(b) to demonstrate that the condenser achieves the applicable performance requirements in § 60.5412(a), then the condenser performance curve must be based on values measured during the performance test and supplemented as necessary by control device design analysis, or control device manufacturer's recommendations, or a combination or both.

(ii) If you use a control device design analysis in accordance with the requirements of § 60.5413(c)(1) to demonstrate that the condenser achieves the applicable performance requirements specified in § 60.5412(a), then the condenser performance curve must be based on the condenser design analysis and supplemented, as necessary, by the control device manufacturer's recommendations.

(g) A deviation for a given control device is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (g)(1) through (g)(6) of this section being met. If you monitor multiple operating parameters for the same control device during the same operating day and more than one of these operating parameters meets a deviation criterion specified in paragraphs (g)(1) through (6) of this section, then a single excursion is determined to have occurred for the control device for that operating day.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum operating parameter limit (or, if applicable, greater than the maximum operating parameter limit) established in paragraph (f)(1) of this section.

(2) If you meet § 60.5412(a)(2), a deviation occurs when the 365-day average condenser efficiency calculated according to the requirements specified in § 60.5415(e)(8)(iv) is less than 95.0 percent.

(3) If you meet § 60.5412(a)(2) and you have less than 365 days of data, a deviation occurs when the average condenser efficiency calculated according to the procedures specified in § 60.5415(e)(8)(iv)(A) or (B) is less than 90.0 percent.

(4) A deviation occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.

(5) If the closed vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, a deviation occurs when the requirements of paragraphs (g)(5)(i) and (ii) of this section are met.

(i) For each bypass line subject to § 60.5411(a)(3)(i)(A), the flow indicator indicates that flow has been detected and that the stream has been diverted away from the control device to the atmosphere.

(ii) For each bypass line subject to § 60.5411(a)(3)(i)(B), if the seal or closure mechanism has been broken, the bypass line valve position has changed, the key for the lock-and-key type lock has been checked out, or the car-seal has broken.

(6) For a combustion control device whose model is tested under § 60.5413(d), a deviation occurs when the conditions of paragraphs (g)(6)(i) or (ii) are met.

(i) The inlet gas flow rate exceeds the maximum established during the test conducted under § 60.5413(d).

(ii) Failure of the monthly visible emissions test conducted under § 60.5415(e)(7)(iii) occurs.

§ 60.5420 What are my notification, reporting, and recordkeeping requirements?

(a) You must submit the notifications required in § 60.7(a)(1) and (4), and according to paragraphs (a)(1) and (2) of this section, if you own or operate one or more of the affected facilities specified in § 60.5365 that was constructed, modified, or reconstructed during the reporting period.

(1) If you own or operate a gas well, pneumatic controller or storage vessel affected facility you are not required to submit the notifications required in § 60.7(a)(1), (3), and (4).

(2)(i) If you own or operate a gas well affected facility, you must submit a notification to the Administrator no later than 2 days prior to the commencement of each well completion operation listing the anticipated date of the well completion operation. The notification shall include contact information for the owner or operator; the API well number, the latitude and longitude coordinates for each well in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983; and the planned date of the beginning of flowback. You may submit the notification in writing or in electronic format.

(ii) If you are subject to state regulations that require advance notification of well completions and you have met those notification requirements, then you are considered to have met the advance notification requirements of paragraph (a)(2)(i) of this section.

(b) *Reporting requirements*. You must submit annual reports containing the information specified in paragraphs (b)(1) through (6) of this section to the Administrator and performance test reports as specified in paragraph (b)(7) of this section. The initial annual report is due 30 days after the end of the initial compliance period as determined according to § 60.5410. Subsequent annual reports are due on the same date each year as the initial annual report. If you own or operate more than one affected facility, you may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) through (6) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. You may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

(1) The general information specified in paragraphs (b)(1)(i) through (iv) of this section.

(i) The company name and address of the affected facility.

(ii) An identification of each affected facility being included in the annual report.

(iii) Beginning and ending dates of the reporting period.

(iv) A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(2) For each gas well affected facility, the information in paragraphs (b)(2)(i) through (ii) of this section.

(i) Records of each well completion operation as specified in paragraph (c)(1)(i) through (iv) of this section for each gas well affected facility conducted during the reporting period. In lieu of submitting the records specified in paragraph (c)(1)(i) through (iv), the owner or operator may submit a list of the well completions with hydraulic fracturing completed during the reporting period and the records required by paragraph (c)(1)(v) of this section for each well completion.

(ii) Records of deviations specified in paragraph (c)(1)(ii) of this section that occurred during the reporting period.

(3) For each centrifugal compressor affected facility, the information specified in paragraphs (b)(3)(i) and (ii) of this section.

(i) An identification of each centrifugal compressor using a wet seal system constructed, modified or reconstructed during the reporting period.

(ii) Records of deviations specified in paragraph (c)(2) of this section that occurred during the reporting period.

(iii) If required to comply with § 60.5380(a)(1), the records of closed vent system and cover inspections specified in paragraph (c)(6) of this section.

(4) For each reciprocating compressor affected facility, the information specified in paragraphs (b)(4)(i) through (ii) of this section.

(i) The cumulative number of hours or operation or the number of months since initial startup, October 15, 2012, or since the previous reciprocating compressor rod packing replacement, whichever is later.

(ii) Records of deviations specified in paragraph (c)(3)(iii) of this section that occurred during the reporting period.

(5) For each pneumatic controller affected facility, the information specified in paragraphs (b)(5)(i) through (v) of this section.

(i) An identification of each pneumatic controller constructed, modified or reconstructed during the reporting period, including the identification information specified in § 60.5390(c)(2).

(ii) If applicable, documentation that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than 6 standard cubic feet per hour are required and the reasons why.

(iii) Records of deviations specified in paragraph (c)(4)(v) of this section that occurred during the reporting period.

(6) For each storage vessel affected facility, the information in paragraphs (b)(6)(i) through (iii) of this section.

(i) An identification of each storage vessel with VOC emissions greater than 6 tpy constructed, modified or reconstructed during the reporting period.

(ii) Documentation that the VOC emission rate is less than 6 tpy for meeting the requirements in § 60.5395(a).

(iii) Records of deviations specified in paragraph (c)(5)(iii) of this section that occurred during the reporting period.

(7)(i) Within 60 days after the date of completing each performance test (see § 60.8 of this part) as required by this subpart you must submit the results of the performance tests required by this subpart to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see *http://www.epa.gov/ttn/chief/ert/index.html*). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority.

(ii) All reports required by this subpart not subject to the requirements in paragraph (a)(2)(i) of this section must be sent to the Administrator at the appropriate address listed in § 63.13 of this part. The Administrator or the delegated authority may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraph (a)(2)(i) and (ii) of this section in paper format.

(c) *Recordkeeping requirements.* You must maintain the records identified as specified in § 60.7(f) and in paragraphs (c)(1) through (10) of this section. All records must be maintained for at least 5 years.

(1) The records for each gas well affected facility as specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Records identifying each well completion operation for each gas well affected facility;

(ii) Records of deviations in cases where well completion operations with hydraulic fracturing were not performed in compliance with the requirements specified in § 60.5375.

(iii) Records required in § 60.5375(b) or (f) for each well completion operation conducted for each gas well affected facility that occurred during the reporting period. You must maintain the records specified in paragraphs (c)(1)(iii)(A) and (B) of this section.

(A) For each gas well affected facility required to comply with the requirements of § 60.5375(a), you must record: The location of the well; the API well number; the duration of flowback; duration of recovery to the flow line; duration of combustion; duration of venting; and specific reasons for venting in lieu of capture or combustion. The duration must be specified in hours of time.

(B) For each gas well affected facility required to comply with the requirements of § 60.5375(f), you must maintain the records specified in paragraph (c)(1)(iii)(A) of this section except that you do not have to record the duration of recovery to the flow line.

(iv) For each gas well facility for which you claim an exception under § 60.5375(a)(3), you must record: The location of the well; the API well number; the specific exception claimed; the starting date and ending date for the period the well operated under the exception; and an explanation of why the well meets the claimed exception.

(v) For each gas well affected facility required to comply with both § 60.5375(a)(1) and (3), records of the digital photograph as specified in § 60.5410(a)(4).

(2) For each centrifugal compressor affected facility, you must maintain records of deviations in cases where the centrifugal compressor was not operated in compliance with the requirements specified in § 60.5380.

(3) For each reciprocating compressors affected facility, you must maintain the records in paragraphs (c)(3)(i) through (iii) of this section.

(i) Records of the cumulative number of hours of operation or number of months since initial startup or October 15, 2012, or the previous replacement of the reciprocating compressor rod packing, whichever is later.

(ii) Records of the date and time of each reciprocating compressor rod packing replacement.

(iii) Records of deviations in cases where the reciprocating compressor was not operated in compliance with the requirements specified in § 60.5385.

(4) For each pneumatic controller affected facility, you must maintain the records identified in paragraphs (c)(4)(i) through (v) of this section.

(i) Records of the date, location and manufacturer specifications for each pneumatic controller constructed, modified or reconstructed.

(ii) Records of the demonstration that the use of pneumatic controller affected facilities with a natural gas bleed rate greater than 6 standard cubic feet per hour are required and the reasons why.

(iii) If the pneumatic controller is not located at a natural gas processing plant, records of the manufacturer's specifications indicating that the controller is designed such that natural gas bleed rate is less than or equal to 6 standard cubic feet per hour.

(iv) If the pneumatic controller is located at a natural gas processing plant, records of the documentation that the natural gas bleed rate is zero.

(v) Records of deviations in cases where the pneumatic controller was not operated in compliance with the requirements specified in § 60.5390.

(5) For each storage vessel affected facility, you must maintain the records identified in paragraphs (c)(5)(i) through (iv) of this section.

(i) If required to reduce emissions by complying with § 60.5395, the records specified in § 60.5416 of this subpart.

(ii) Records of the determination that the VOC emission rate is less than 6 tpy per storage vessel for the exemption under § 60.5395(a), including identification of the model or calculation methodology used to calculate the VOC emission rate.

(iii) Records of deviations in cases where the storage vessel was not operated in compliance with the requirements specified in §§ 60.5395, 60.5411, 60.5412, and 60.5413.

(iv) For vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), records indicating the number of consecutive days that the vessel is located at a site in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment. If a vessel is removed from a site and, within 30 days, is either returned to or replaced by another vessel at the site to serve the same or similar function, then the entire period

since the original vessel was first located at the site, including the days when the storage vessel was removed, will be added to the count towards the number of consecutive days.

(6) For each storage vessel or centrifugal compressor subject to the closed vent system inspection requirements of § 60.5416(a)(1) and (2), records of each inspection.

(7) For each storage vessel or centrifugal compressor subject to the cover requirements of § 60.5416(a)(3), a record of each inspection.

(8) For each storage vessel or centrifugal compressor subject to the bypass requirements of § 60.5416(a)(4), a record of each inspection or a record each time the key is checked out or a record of each time the alarm is sounded.

(9) For each closed vent system used to comply with this subpart that must operate with no detectable emissions, a record of the monitoring conducted in accordance with § 60.5416(b)(13).

(10) Records of the schedule for carbon replacement (as determined by the design analysis requirements of § 60.5413(c)(2) or (3)) and records of each carbon replacement as specified in § 60.5412(c)(1).

(11) For each storage vessel or centrifugal compressor subject to the control device requirements of § 60.5412, records of minimum and maximum operating parameter values, continuous parameter monitoring system data, calculated averages of continuous parameter monitoring system data, results of all compliance calculations, and results of all inspections.

§ 60.5421 What are my additional recordkeeping requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants?

(a) You must comply with the requirements of paragraph (b) of this section in addition to the requirements of § 60.486a.

(b) The following recordkeeping requirements apply to pressure relief devices subject to the requirements of § 60.5401(b)(1) of this subpart.

(1) When each leak is detected as specified in § 60.5401(b)(2), a weatherproof and readily visible identification, marked with the equipment identification number, must be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.

(2) When each leak is detected as specified in § 60.5401(b)(2), the following information must be recorded in a log and shall be kept for 2 years in a readily accessible location:

(i) The instrument and operator identification numbers and the equipment identification number.

(ii) The date the leak was detected and the dates of each attempt to repair the leak.

(iii) Repair methods applied in each attempt to repair the leak.

(iv) ''Above 500 ppm'' if the maximum instrument reading measured by the methods specified in paragraph (a) of this section after each repair attempt is 500 ppm or greater.

(v) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(vi) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(viii) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(ix) The date of successful repair of the leak.

(x) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of § 60.482–4a(a). The designation of equipment subject to the provisions of § 60.482–4a(a) must be signed by the owner or operator.

§ 60.5422 What are my additional reporting requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants?

(a) You must comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of § 60.487a(a), (b), (c)(2)(i) through (iv), and (c)(2)(vii) through (viii).

(b) An owner or operator must include the following information in the initial semiannual report in addition to

the information required in § 60.487a(b)(1) through (4): Number of pressure relief devices subject to the requirements of § 60.5401(b) except for those pressure relief devices designated for no detectable emissions under the provisions of § 60.482–4a(a) and those pressure relief devices complying with § 60.482–4a(c).

(c) An owner or operator must include the following information in all semiannual reports in addition to the information required in § 60.487a(c)(2)(i) through (vi):

(1) Number of pressure relief devices for which leaks were detected as required in § 60.5401(b)(2); and

(2) Number of pressure relief devices for which leaks were not repaired as required in § 60.5401(b)(3).

§ 60.5423 What additional recordkeeping and reporting requirements apply to my sweetening unit affected facilities at onshore natural gas processing plants?

(a) You must retain records of the calculations and measurements required in § 60.5405(a) and (b) and § 60.5407(a) through (g) for at least 2 years following the date of the measurements. This requirement is included under § 60.7(d) of the General Provisions.

(b) You must submit a report of excess emissions to the Administrator in your annual report if you had excess emissions during the reporting period. For the purpose of these reports, excess emissions are defined as:

(1) Any 24-hour period (at consistent intervals) during which the average sulfur emission reduction efficiency (R) is less than the minimum required efficiency (Z).

(2) For any affected facility electing to comply with the provisions of § 60.5407(b)(2), any 24-hour period during which the average temperature of the gases leaving the combustion zone of an incinerator is less than the appropriate operating temperature as determined during the most recent performance test in accordance with the provisions of § 60.5407(b)(2). Each 24-hour period must consist of at least 96 temperature measurements equally spaced over the 24 hours.

(c) To certify that a facility is exempt from the control requirements of these standards, for each facility with a design capacity less that 2 LT/D of H_2S in the acid gas (expressed as sulfur) you must keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of H_2S expressed as sulfur.

(d) If you elect to comply with § 60.5407(e) you must keep, for the life of the facility, a record demonstrating that the facility's design capacity is less than 150 LT/D of H_2S expressed as sulfur.

(e) The requirements of paragraph (b) of this section remain in force until and unless the EPA, in delegating enforcement authority to a state under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of obligation to comply with paragraph (b) of this section, provided that they comply with the requirements established by the state.

§ 60.5425 What part of the General Provisions apply to me?

Table 3 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

§ 60.5430 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A or subpart VVa of part 60; and the following terms shall have the specific meanings given them.

Acid gas means a gas stream of hydrogen sulfide (H_2S) and carbon dioxide (CO_2) that has been separated from sour natural gas by a sweetening unit.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Alaskan North Slope means the approximately 69,000 square-mile area extending from the Brooks Range to the Arctic Ocean.

API Gravity means the weight per unit volume of hydrocarbon liquids as measured by a system recommended by the American Petroleum Institute (API) and is expressed in degrees.

Bleed rate means the rate in standard cubic feet per hour at which natural gas is continuously vented (bleeds) from a pneumatic controller.

Centrifugal compressor means any machine for raising the pressure of a natural gas by drawing in low pressure natural gas and discharging significantly higher pressure natural gas by means of mechanical rotating vanes or impellers. Screw, sliding vane, and liquid ring compressors are not centrifugal compressors for the purposes of this subpart.

City gate means the delivery point at which natural gas is transferred from a transmission pipeline to the local gas utility.

Completion combustion device means any ignition device, installed horizontally or vertically, used in exploration and production operations to combust otherwise vented emissions from completions.

Compressor station means any permanent combination of one or more compressors that move natural gas at increased pressure from fields, in transmission pipelines, or into storage.

Continuous bleed means a continuous flow of pneumatic supply natural gas to the process control device (e.g., level control, temperature control, pressure control) where the supply gas pressure is modulated by the process condition, and then flows to the valve controller where the signal is compared with the process set-point to adjust gas pressure in the valve actuator.

Custody transfer means the transfer of natural gas after processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation.

Dehydrator means a device in which an absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber).

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limit, operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

Delineation well means a well drilled in order to determine the boundary of a field or producing reservoir.

Equipment means each pump, pressure relief device, open-ended valve or line, valve, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart.

Field gas means feedstock gas entering the natural gas processing plant.

Field gas gathering means the system used transport field gas from a field to the main pipeline in the area.

Flare means a thermal oxidation system using an open (without enclosure) flame. Completion combustion devices as defined in this section are not considered flares.

Flow line means a pipeline used to transport oil and/or gas from the well to a processing facility, a mainline pipeline, re-injection, or other useful purpose.

Flowback means the process of allowing fluids to flow from a natural gas well following a treatment, either in preparation for a subsequent phase of treatment or in preparation for clean-up and returning the well to production. The flowback period begins when material introduced into the well during the treatment returns to the surface immediately following hydraulic fracturing or refracturing. The flowback period ends with either well shut in or when the well is producing continuously to the flow line or to a storage vessel for collection, whichever occurs first.

Gas processing plant process unit means equipment assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

Gas well or natural gas well means an onshore well drilled principally for production of natural gas.

Hydraulic fracturing or refracturing means the process of directing pressurized fluids containing any combination of water, proppant, and any added chemicals to penetrate tight formations, such as shale or coal formations, that subsequently require high rate, extended flowback to expel fracture fluids and solids during completions.

Hydraulic refracturing means conducting a subsequent hydraulic fracturing operation at a well that has previously undergone a hydraulic fracturing operation.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.485a(e) or § 60.5401(g)(2) of this part.

In wet gas service means that a compressor or piece of equipment contains or contacts the field gas before the extraction step at a gas processing plant process unit.

Intermittent/snap-action pneumatic controller means a pneumatic controller that vents non-continuously.

Liquefied natural gas unit means a unit used to cool natural gas to the point at which it is condensed into a liquid which is colorless, odorless, noncorrosive and non-toxic.

Low pressure gas well means a well with reservoir pressure and vertical well depth such that 0.445 times the reservoir pressure (in psia) minus 0.038 times the vertical well depth (in feet) minus 67.578 psia is less than the flow line pressure at the sales meter.

Natural gas-driven pneumatic controller means a pneumatic controller powered by pressurized natural gas.

Natural gas liquids means the hydrocarbons, such as ethane, propane, butane, and pentane that are extracted from field gas.

Natural gas processing plant (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both. A Joule-Thompson valve, a dew point depression valve, or an isolated or standalone Joule-Thompson skid is not a natural gas processing plant.

Natural gas transmission means the pipelines used for the long distance transport of natural gas (excluding processing). Specific equipment used in natural gas transmission includes the land, mains, valves, meters, boosters, regulators, storage vessels, dehydrators, compressors, and their driving units and appurtenances, and equipment used for transporting gas from a production plant, delivery point of purchased gas, gathering system, storage area, or other wholesale source of gas to one or more distribution area(s).

Nonfractionating plant means any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

Non-natural gas-driven pneumatic controller means an instrument that is actuated using other sources of power than pressurized natural gas; examples include solar, electric, and instrument air.

Onshore means all facilities except those that are located in the territorial seas or on the outer continental shelf.

Pneumatic controller means an automated instrument used for maintaining a process condition such as liquid level, pressure, delta-pressure and temperature.

Pressure vessel means a storage vessel that is used to store liquids or gases and is designed not to vent to the atmosphere as a result of compression of the vapor headspace in the pressure vessel during filling of the pressure vessel to its design capacity.

Process unit means components assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate

independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

Reciprocating compressor means a piece of equipment that increases the pressure of a process gas by positive displacement, employing linear movement of the driveshaft.

Reciprocating compressor rod packing means a series of flexible rings in machined metal cups that fit around the reciprocating compressor piston rod to create a seal limiting the amount of compressed natural gas that escapes to the atmosphere.

Reduced emissions completion means a well completion following fracturing or refracturing where gas flowback that is otherwise vented is captured, cleaned, and routed to the flow line or collection system, re-injected into the well or another well, used as an on-site fuel source, or used for other useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere.

Reduced sulfur compounds means H_2S, carbonyl sulfide (COS), and carbon disulfide (CS_2).

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 facilities:

(i) The designated representative in so far as actions, standards, requirements, or prohibitions under title IV of the Clean Air Act or the regulations promulgated thereunder are concerned; or

(ii) The designated representative for any other purposes under part 60.

Routed to a process or route to a process means the emissions are conveyed via a closed vent system to any enclosed portion of a process unit where the emissions are predominantly recycled and/or consumed in the same manner as a material that fulfills the same function in the process and/or transformed by chemical reaction into materials that are not regulated materials and/or incorporated into a product; and/or recovered.

Salable quality gas means natural gas that meets the composition, moisture, or other limits set by the purchaser of the natural gas, regardless of whether such gas is sold.

Storage vessel means a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

(1) Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If you do not keep or are not able to produce records, as required by § 60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.

(2) Process vessels such as surge control vessels, bottoms receivers or knockout vessels.

(3) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

Sulfur production rate means the rate of liquid sulfur accumulation from the sulfur recovery unit.

Sulfur recovery unit means a process device that recovers element sulfur from acid gas.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Sweetening unit means a process device that removes hydrogen sulfide and/or carbon dioxide from the sour natural gas stream.

Total Reduced Sulfur (TRS) means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide as measured by Method 16 of appendix A to part 60 of this chapter.

Total SO2 equivalents means the sum of volumetric or mass concentrations of the sulfur compounds obtained by adding the quantity existing as SO_2 to the quantity of SO_2 that would be obtained if all reduced sulfur compounds were converted to SO_2 (ppmv or kg/dscm (lb/dscf)).

Underground storage vessel means a storage vessel stored below ground.

Well means an oil or gas well, a hole drilled for the purpose of producing oil or gas, or a well into which fluids are injected.

Well completion means the process that allows for the flowback of petroleum or natural gas from newly drilled wells to expel drilling and reservoir fluids and tests the reservoir flow characteristics, which may vent produced hydrocarbons to the atmosphere via an open pit or tank.

Well completion operation means any well completion with hydraulic fracturing or refracturing occurring at a gas well affected facility.

Well site means one or more areas that are directly disturbed during the drilling and subsequent operation of, or affected by, production facilities directly associated with any oil well, gas well, or injection well and its associated well pad.

Wellhead means the piping, casing, tubing and connected valves protruding above the earth's surface for an oil and/or natural gas well. The wellhead ends where the flow line connects to a wellhead valve. The wellhead does not include other equipment at the well site except for any conveyance through which gas is vented to the atmosphere.

Wildcat well means a well outside known fields or the first well drilled in an oil or gas field where no other oil and gas production exists.

TABLE 1 TO SUBPART OOOO OF PART 60—REQUIRED MINIMUM INITIAL SO_2 EMISSION REDUCTION EFFICIENCY (Z_i)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \le X \le 5.0$	$5.0 < X \le 15.0$	$15.0 < X \le 300.0$	$X > 300.0$
$Y \ge 50$	79.0	$88.51X^{0.0101}Y^{0.0125}$ or 99.9, whichever is smaller.		
$20 \le Y < 50$	79.0	$88.5X^{0.0101}Y^{0.0125}$ or 97.9, whichever is smaller.		97.9
$10 \le Y < 20$	79.0	$88.5X^{0.0101}Y^{0.0125}$ or 97.9, whichever is smaller.	93.5	93.5
$Y < 10$	79.0	79.0	79.0	79.0

TABLE 2 TO SUBPART OOOO OF PART 60—REQUIRED MINIMUM SO_2 EMISSION REDUCTION EFFICIENCY (Z_c)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \le X \le 5.0$	$5.0 < X \le 15.0$	$15.0 < X \le 300.0$	$X > 300.0$
$Y \ge 50$	74.0	$85.35X^{0.0144}Y^{0.0128}$ or 99.9, whichever is smaller.		

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$20 \leq Y < 50$	74.0	$85.35X^{0.0144}Y^{0.0128}$ or 97.9, whichever is smaller.		97.5
$10 \leq Y < 20$	74.0	$85.35X^{0.0144}Y^{0.0128}$ or 90.8, whichever is smaller.		90.8
$Y < 10$	74.0	74.0	74.0	74.0

E = The sulfur emission rate expressed as elemental sulfur, kilograms per hour (kg/hr) [pounds per hour (lb/hr)], rounded to one decimal place.
R = The sulfur emission reduction efficiency achieved in percent, carried to one decimal place.
S = The sulfur production rate, kilograms per hour (kg/hr) [pounds per hour (lb/hr)], rounded to one decimal place.
X = The sulfur feed rate from the sweetening unit (*i.e.,* the H_2S in the acid gas), expressed as sulfur, Mg/D(LT/D), rounded to one decimal place.
Y = The sulfur content of the acid gas from the sweetening unit, expressed as mole percent H_2S (dry basis) rounded to one decimal place.
Z = The minimum required sulfur dioxide (SO_2) emission reduction efficiency, expressed as percent carried to one decimal place. Z_i refers to the reduction efficiency required at the initial performance test. Z_c refers to the reduction efficiency required on a continuous basis after compliance with Z_i has been demonstrated.

Table 3 to Subpart OOOO of Part 60—Applicability of General Provisions to Subpart OOOO

As stated in § 60.5425, you must comply with the following applicable General Provisions:

General provisions citation	Subject of citation	Applies to subpart?	Explanation
§ 60.1	General applicability of the General Provisions.	Yes.	
§ 60.2	Definitions	Yes	Additional terms defined in § 60.5430.
§ 60.3	Units and abbreviations	Yes.	
§ 60.4	Address	Yes.	
§ 60.5	Determination of construction or modification.	Yes.	
§ 60.6	Review of plans	Yes.	
§ 60.7	Notification and record keeping	Yes	Except that § 60.7 only applies as specified in § 60.5420(a).
§ 60.8	Performance tests	Yes	Performance testing is required for control devices used on storage vessels and centrifugal compressors.
§ 60.9	Availability of information	Yes.	
§ 60.10	State authority	Yes.	
§ 60.11	Compliance with standards and maintenance requirements.	No	Requirements are specified in subpart OOOO.
§ 60.12	Circumvention	Yes.	
§ 60.13	Monitoring requirements	Yes	Continuous monitors are required for storage vessels.
§ 60.14	Modification	Yes.	
§ 60.15	Reconstruction	Yes.	
§ 60.16	Priority list	Yes.	
§ 60.17	Incorporations by reference	Yes.	
§ 60.18	General control device requirements	Yes	Except that § 60.18 does not apply to flares.
§ 60.19	General notification and reporting requirement.	Yes.	