## ENVIRONMENTAL PROTECTION AGENCY

## 40 CFR Part 63

**[IL–64–2–5807; FRL–5656–4]**

**RIN 2060–AE40 and 2060–AE44**

# National Emission Standard for Hazardous Air Pollutants Phosphoric Acid Manufacturing and Phosphate Fertilizers Production

**AGENCY:** Environmental Protection Agency (Agency).

**ACTION:** Proposed rule and notice of public hearing.

**SUMMARY:** This action proposes national emission standards for hazardous air pollutants (NESHAP) for new and existing major sources in phosphoric acid manufacturing and phosphate fertilizers production plants. Hazardous air pollutants (HAPs) emitted by the facilities covered by this proposed rule include hydrogen fluoride (HF); arsenic, beryllium, cadmium, chromium, manganese, mercury, and nickel (HAP metals); and methyl isobutyl ketone (MIBK) emissions. Human exposure to the HAP constituents in these emissions may be associated with adverse carcinogenic, respiratory, nervous system, dermal, developmental, and/or reproductive health effects. Implementation of the proposed requirements would achieve an emission reduction of HF estimated at 315 megagrams per year (Mg/yr) (345 tons per year [tpy]). The standards would reduce 940 Mg/yr (1035 tpy)of total fluorides and particulate matter containing heavy metals which are regulated pollutants under the Clean Air Act as amended (the Act).

The standards are proposed under the authority of section 112(d) of the Act and are based on the Administrator's determination that phosphoric acid manufacturing and phosphate fertilizers production plants may reasonably be anticipated to emit several of the 189 HAPs listed in section 112(b) of the Act from the various process operations found within the industry. The proposed NESHAP would provide protection to the public by requiring all phosphoric acid manufacturing and phosphate fertilizers plants that are major sources to meet emission standards reflecting the application of the maximum achievable control technology (MACT).

**DATES:** *Comments.* Comments on the proposed standards must be received on or before February 25, 1997 at the address noted below.

*Public hearing.* If anyone contacts the Agency requesting to speak at a public hearing, the hearing will be held on February 10, 1997 beginning at 9 a.m. Persons wishing to present oral testimony must contact the Agency by January 21, 1997.

**ADDRESSES:** *Comments.* Interested parties may submit written comments (in duplicate if possible) to Public Docket No. A–94–02 at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (formerly known as the Air Docket) (6102), 401 M Street, S.W., Washington, DC 20460. The Agency requests that a separate copy also be sent to the contact person listed below. The docket is located at the above address in Room M–1500, Waterside Mall (ground floor), and may be inspected from 8 a.m. to 4 p.m., Monday through Friday. The docket is an organized and complete file of all the information submitted to or otherwise considered by Agency in the development of this proposed rulemaking. For additional information on the Docket and electronic availability see Supplementary Information.

*Public Hearing.* If anyone contacts the Agency requesting to speak at a public hearing, the hearing will be held at the Agency's Office of Administration Auditorium, Research Triangle Park, North Carolina. If a public hearing is requested and held, EPA will ask clarifying questions during the oral presentation but will not respond to the presentations or comments. Written statements and supporting information will be considered with equivalent weight as any oral statement and supporting information subsequently presented at a public hearing, if held. Persons wishing to present oral testimony or to inquire as to whether or not a hearing is to be held should notify Ms. Cathy Coats, Minerals and Inorganic Chemicals Group (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–5422.

**FOR FURTHER INFORMATION CONTACT:** For information concerning specific aspects of this proposal, contact Mr. David Painter [telephone number (919) 541–5515], Minerals and Inorganic Chemicals Group, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

**SUPPLEMENTARY INFORMATION:**

*Regulated Entities.* Today's proposed rulemaking would apply to process components at new and existing phosphoric acid manufacturing and phosphate fertilizers production plants. Examples of those process components are listed in the following table:

| Source category | Examples |
|---|---|
| Phosphoric acid manufacturing. | Wet Process Phosphoric Acid Plant, Superphosphoric Acid Plant, Phosphate Rock Dryer, Phosphate Rock Calciner, Purified Phosphoric Acid Plant. |
| Phosphate fertilizers production. | Diammonium and/or Monoammonium Phosphate Plant, Granular Triple Superphosphate Plant, Granular Triple Superphosphate Storage Building. |

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the proposed regulations. This table lists the types of entities that the Agency is now aware could be potentially regulated. To determine whether your facility could be regulated by the proposed regulations, you should carefully examine the applicability criteria in the proposed rules. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

The principal purposes of the docket are: (1) to allow interested parties to readily identify and locate documents so that they can intelligently and effectively participate in the rulemaking process, and (2) to serve as the record in case of judicial review. The docket index, technical support information, the economic profile of the industry (item II-A–27) and other materials related to this rulemaking are available for review in the docket center or copies may be mailed on request from the Air and Radiation Docket and Information Center by calling (202) 260–7548 or 7549. The FAX number for the Center is (202) 260–4000. A reasonable fee may be charged for copying docket materials.

In addition to being available in the docket, an electronic copy of today's document which includes the proposed regulatory text is available on the Technology Transfer Network (TTN), one of Agency's electronic bulletin boards. The TTN provides information and technology exchange in various areas of air pollution control. The service is free, except for the cost of a phone call. Dial (919) 541–5742 for up

to a 14,400 bps modem. If more information on the TTN is needed, call the TTN HELP line at (919) 541–5384.

The information in this preamble is organized as shown below.

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## I. Statutory Authority

The statutory authority for this proposal is provided by sections 101, 112, 114, 116, and 301 of the Clean Air Act, as amended (42 U.S.C. 7401, 7412, 7414, 7416, and 7601).

## II. Introduction

### *A. Background*

The EPA estimates that up to 550 Mg/yr (605 tpy) of HF, the predominate HAP, and other HAPs are emitted from sources at phosphoric acid manufacturing and phosphate fertilizers production plants at the current level of control. Implementing MACT-level controls is expected to reduce these HAP emissions from regulated sources by about 315 Mg/yr (345 tpy) nationwide. Plants affected by the standards could achieve these reductions by upgrading or installing wet scrubbing systems.

The overall effect would be to raise the control performance of plants in the industry to the level achieved by the best performing plants. In addition to the health and environmental benefits associated with HAP emission reductions, benefits of this action include a decrease in site-specific levels of nonHAP pollutants and lowered occupational exposure levels for employees.

The nationwide capital and annualized costs of the proposed NESHAP, including emission controls and associated monitoring equipment, are estimated at $1.4 million and $862,000/yr, respectively. The economic impacts are predicted to increase prices in all products less than three fourths of a percent. At least one company in the industry is a small entity which would be subject to the proposed standards. The economic impact of the proposed NESHAP on this company is estimated to be low and would not be significant. No production line or plant closures are expected.

The Agency has proposed controls at the MACT-floor level and tailored the requirements to allow less-costly testing and monitoring by using surrogates for HAP emissions.

A detailed description of industry processes and emissions data used to support the standards is presented in the draft ''Technical Support Document for Phosphoric Acid Manufacturing and Phosphate Fertilizers Production NESHAP'' which, along with additional supporting information is included in a memorandum in air docket A–94–02, as item II–B–20. This memorandum is referred to as the TSD in the following discussions.

### *B. NESHAP for Source Categories*

Section 112 of the Act requires that EPA promulgate regulations for the control of HAP emissions from both new and existing major sources. The statute requires the regulations to reflect the maximum degree of reduction in emissions of HAPs that is achievable taking into consideration the cost of achieving the emission reduction, any nonair quality health and environmental reduction, and energy requirements. This level of control is commonly referred to as the maximum achievable control technology (MACT).

The control of HAPs is achieved through the promulgation of technology-based emission standards under sections 112(d) and 112(f) and work practice standards under 112(h) for categories of sources that emit HAPs. Emission reductions may be accomplished through the application of measures, processes, methods, systems, or techniques including, but not limited to: (1) Reducing the volume of, or eliminating emissions of, such pollutants through process changes, substitution of materials, or other modifications; (2) enclosing systems or processes to eliminate emissions; (3) collecting, capturing, or treating such pollutants when released from a process, stack, storage or fugitive emissions point; (4) design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in subsection (h); or (5) a combination of the above. [See section 112(d)(2).] The EPA may promulgate more stringent regulations at a later date to address residual risk that remains after the imposition of controls. [See section 112(f)(2).]

### *C. Health Effects of Pollutants*

The Act was created, in part, ''to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population'' (CAA, section 101(b)(1)). Title III of the Act establishes a control technology-based program to reduce stationary source emissions of HAPs. The goal of section 112(d) is to apply such control technology to reduce emissions and thereby reduce the hazard of HAPs emitted from stationary sources.

This proposed rule is technology-based (i.e., based on MACT). The Act's strategy avoids dependence on a risk-based approach which would be limited by incomplete information on what HAPs are emitted, what level of emissions is occurring, what health and safety benchmarks are available to assess risk, what health effects may be caused by certain pollutants, and how best to model these effects, among other things. Because of these issues, a detailed quantitative risk assessment of potential effects from HAPs emitted from phosphoric acid manufacturing and phosphate fertilizer production plants is not included in this rulemaking.

The EPA does recognize that the degree of adverse effects to health can range from mild to severe. The extent and degree to which the health effects may be experienced is dependent upon (1) the ambient concentrations observed

in the area, (2) duration of exposures, and (3) characteristics of exposed individuals (e.g., genetics, age, pre-existing health conditions, and lifestyle) which vary significantly with the population. Some of these factors are also influenced by source-specific characteristics (e.g., emission rates and local meteorological conditions) as well as pollutant-specific characteristics.

Available emission data, collected during development of this proposed NESHAP, show that HF, a number of HAP metals, and MIBK are the most significant HAPs emitted from phosphoric acid manufacturing and phosphate fertilizer production plants. These pollutants have the potential to be reduced by implementation of the proposed emission limits. Following is a summary of the potential health effects associated with exposures, at some level, to emitted pollutants that would be reduced by the standard.

Short-term inhalation exposure to gaseous HF and related fluoride compounds can cause severe respiratory damage in humans, including severe irritation and pulmonary edema. Long-term inhalation exposures to low levels of HF by humans has been reported to result in irritation and congestion of the nose, throat, and bronchi while damage to liver, kidney, and lungs has been observed in animals. Long-term inhalation exposure, at levels of HF well above the ambient concentrations being observed at phosphate fertilizers complexes can result in skeletal fluorosis (i.e., an accumulation of fluoride in the bones). There is generally a lack of information on human health effects associated with exposures to hydrogen fluoride at current ambient air concentrations near phosphate fertilizers complexes. Occupational studies have not specifically implicated inhaled fluoride as a cause of cancer and the Agency has not classified HF with respect to potential carcinogenicity.

Almost all metals appearing on the section 112(b) list of HAPs are emitted from phosphoric acid manufacturing and phosphate fertilizers production facilities. The most important of the nonvolatile metals that would be reduced by the standard are arsenic, beryllium, cadmium, chromium, nickel, and manganese compounds. The major target of toxicity for these metals via inhalation tends to be the respiratory tract, with the exception of manganese, for which the central nervous system is the primary target. These metals can cause a range of effects including mucous membrane irritation (e.g., bronchitis, decreased lung function), gastrointestinal effects, nervous system disorders (from loss of function to tremor and numbness), skin irritation, and reproductive and developmental disorders. Additionally, several of the metals accumulate in the environment and in the human body. Cadmium, for example, is a cumulative pollutant, which can cause kidney effects after the cessation of exposure. Similarly, the onset of effects from beryllium exposure may be delayed months to years. Metals and metal compounds that would be reduced by this proposed rule are also known (arsenic and chromium) and probable (beryllium and cadmium)human carcinogens.

Mercury, a volatile metal, would also be reduced by the proposed standard. All forms of mercury may be characterized as quite toxic, with different health effects associated with different forms of the pollutant. Methyl mercury is the most toxic form of mercury to which humans and wildlife are generally exposed. Exposure to methyl mercury occurs primarily through ingestion of fish. Methyl mercury primarily effects the nervous systems in humans. The range of neurotoxic effects can vary from subtle decrements in motor skills and sensory ability to tremors, inability to walk, convulsions, and death. Exposure to inorganic mercury is associated with renal impairment. Some forms of mercury have also been classified as possible human carcinogens. Exposure to mercury compounds can also cause effects in plants, birds, and non-human mammals. Reproductive effects are the primary concern for avian mercury poisoning.

The organic compound that would be reduced by this standard is MIBK. Some of the human health effects associated with short-term exposure, at some level, to this pollutant include irritation to the eyes and mucous membranes, weakness, headache, nausea, lightheadedness, dizziness, incoordination, and narcosis. Long-term occupational exposure has been observed to cause nausea, headache, burning in the eyes, weakness, insomnia, intestinal pain, and slight enlargement of the liver in humans. No information is available on the carcinogenic effects of MIBK in humans.

### *D. Phosphoric Acid Manufacturing and Phosphate Fertilizers Production Industry Profile*

This section includes general overviews of the two source categories for which NESHAP are being proposed. Phosphoric acid is manufactured by way of two process approaches. One approach is the thermal process whereby purified elemental phosphorous is combusted and hydrated to directly form phosphoric acid. There are currently ten facilities operating in the United States. For the period from 1971–1991, nationwide production of phosphoric acid via the thermal process declined by forty-seven percent and this trend is expected to continue. No new thermal process plants are expected to be constructed. The decline in usage of this process may be attributed to price competition by competitive products, energy costs associated with production of feedstock phosphorous and safety concerns with regard to shipping phosphorous.

The second means of manufacturing phosphoric acid is through wet processes. There are 47 wet acid plants at 21 locations. The basic step for producing phosphoric acid is the acidulation of phosphate rock. Typically, sulfuric acid, phosphate rock and water are reacted with one another to produce phosphoric acid and gypsum. When phosphate rock is acidulated to manufacture wet process phosphoric acid (WPPA), fluorine contained in the rock is released. Fluoride compounds, including HF, are evolved as particulates and gases which are emitted to the atmosphere unless removed from the exhaust stream. Some of these same fluoride compounds also remain in the product acid and are available for release as air pollutants during subsequent processing of the acid. Gypsum is pumped as a slurry to ponds atop stacks of waste gypsum where the liquids separate from the slurry and are decanted for return to the process with process cooling water. The gypsum is discarded as a major solid waste stream. There are 13 acid plants at eight locations which concentrate WPPA to make superphosphoric acid (SPA). Most producers use the vacuum evaporation process. One manufacturer uses the submerged combustion process to achieve the same effect.

The bulk of WPPA is used to produce fertilizers and animal feeds. In addition, two companies now use solvent extraction processes to further refine WPPA into purified phosphoric acid (PPA) for use in food manufacturing or specialized chemical processes. Purified phosphoric acid produced through wet processes now competes directly with acid produced by the thermal process.

There are two major processes employed for the production of phosphate fertilizers. One produces ammoniated phosphate fertilizers in the form of either diammonium phosphate (DAP) or monoammonium phosphate (MAP). Approximately 85 percent of all ammonium phosphates are produced as DAP. Diammonium phosphate and MAP

plants are generally collocated with wet-process phosphoric acid plants. Forty individual production units for DAP or MAP are located at 22 facilities. Plants that produce DAP and MAP are generally co-located with wet-process phosphoric acid plants. Most facilities can produce either product in the same process train.

Diammonium phosphate and MAP are manufactured from phosphoric acid and ammonia. The process consists of three basic steps: reaction, granulation, and finishing operations such as drying, cooling, and screening. Side reactions resulting from the production of ammonium phosphates produce ammonium fluoride, ammonium sulfate, and ammonium fluorosilicate. In addition, some of the fluorine is liberated as $SiF_4$ and HF. Sources of fluoride emissions from DAP/MAP plants include the reactor, granulator, dryer, cooler, screens, and mills.

The second major process employed in the phosphate fertilizers industry produces granular triple superphosphate (GTSP). Ten production units at seven facilities produce GTSP in the U.S. The primary raw materials used to produce GTSP are WPPA and ground phosphate rock. Plants that produce GTSP are generally collocated with wet-process phosphoric acid plants. Granular triple superphosphate is an impure monocalcium phosphate made by reacting phosphoric acid with ground phosphate rock. After manufacture, the product is sent to a storage building by a conveyor belt which discharges the material into bins or piles for curing. The GTSP is typically held five to ten days to stabilize the composition, after which it is considered cured and ready for shipping. Sources of emissions from GTSP plants include the reactor, the granulator, the dryer, the cooler, the screening and crushing equipment, and the storage building. Fluorides are emitted in both gaseous and particulate form. The reactor and granulator account for about 38 percent of the fluoride emissions; the dryer and screens account for 50 percent, and the storage facilities account for the remainder.

## III. Summary of Proposed Standards

### *A. Applicability*

The proposed standards apply to affected sources at each existing, modified, reconstructed, and newly constructed phosphoric acid manufacturing plant and each phosphate fertilizers production plant. All phosphoric acid manufacturing and phosphate fertilizers production plants that are major sources of HAPs would be subject to the standards. Provisions are included in the NESHAP General Provisions (40 CFR part 63, subpart A) for the owner or operator to obtain a determination of applicability. A facility that is determined by EPA to be an area source would not be subject to the NESHAP.

### *B. Emission Limits and Requirements*

The emissions levels being proposed for NESHAP for existing and new sources are given in the tables below. The permit information and test data used to select these proposed limits are presented in the TSD referenced above. The rationale for selection of the individual emissions limits is explained in section V.C. of this notice.

PROPOSED EMISSIONS LIMITATIONS FOR EXISTING PHOSPHORIC ACID MANUFACTURING PLANTS AND PHOSPHATE FERTILIZERS PLANTS

| Class of source | Pollutant | Proposed emission limit |
|---|---|---|
| Wet Process Phosphoric Acid Plant. | Total Fluorides. | 0.020 lb. Total Fluoride ($F^-$)Per Ton $P_2O_5$ Feed. |
| Superphosphoric Acid Plant. | Total Fluorides. | 0.010 lb. $F^-$ Per Ton $P_2O_5$ Feed. |
| Diammonium and/or Monoammonium Phosphate Plant. | Total Fluorides. | 0.060 lb. $F^-$ Per Ton $P_2O_5$ Feed. |
| Granular Triple Superphosphate Plant. | Total Fluorides. | 0.150 lb. $F^-$ Per Ton $P_2O_5$ Feed. |
| Granular Triple Superphosphate Storage Buildings. | Total Fluorides. | 5.0 X $10^{-4}$ lb. $F^-$ Per Hour Per Ton of $P_2O_5$ Stored. |
| Phosphate Rock Dryers. | Particulate Matter. | 0.2150 lb. PM Per Ton of Rock Feed. |
| Phosphate Rock Calciners. | Particulate Matter. | 0.060 grains PM Per Dry Standard Cubic Foot. |
| Purified Phosphoric Acid Plants. | MIBK ..... | 0.168640 lb. MIBK Per Ton $P_2O_5$ Feed. |

PROPOSED EMISSIONS LIMITATIONS FOR NEW PHOSPHORIC ACID MANUFACTURING PLANTS AND PHOSPHATE FERTILIZERS PLANTS

| Class of source | Pollutant | Proposed emission limit |
|---|---|---|
| Wet Process Phosphoric Acid Plant. | Total Fluorides. | 0.01350 lb. Total Fluoride ($F-$) per ton $P_2O_5$ Feed. |
| Superphosphoric Acid Plant. | Total Fluorides. | 0.00870 lb. $F-$ per ton $P_2O_5$ Feed. |
| Diammonium and/or Monoammonium Phosphate Plant. | Total Fluorides. | 0.0580 lb. $F-$ per ton $P_2O_5$ Feed. |
| Granular Triple Superphosphate Plant. | Total Fluorides. | 0.1230 lb. $F-$ per ton $P_2O_5$ Feed. |
| Granular Triple Superphosphate Storage Buildings. | Total Fluorides. | $5.0\times10-^4$ lb. $F-$ Per Hour Per Ton of $P_2O_5$ Stored. |
| Phosphate Rock Dryers. | Particulate Matter. | 0.060 lb. PM Per Ton of Rock Feed. |
| Phosphate Rock Calciners. | Particulate Matter. | 0.040 grains PM Per Dry Standard Cubic Foot. |
| Purified Phosphoric Acid Plants. | MIBK ..... | 0.168640 lb. MIBK Per Ton $P_2O_5$ Feed. |

### *C. Performance Test and Compliance Provisions*

A one-time performance test would be required to demonstrate initial compliance with each applicable numerical limit for total fluorides or particulate matter. The owner/operator would be required to record process and control device operating parameters during the performance test. The owner/operator would be required to maintain scrubber pressure drop and liquid flow rate within plus or minus ten percent of the values recorded during the performance test. Any exceedance of that operating range would be considered a violation of the applicable standard. A source would be allowed up to 30 days to re-test and demonstrate compliance with the numerical limit of the standard. As an alternative to the preceding, the proposed regulations would provide sources the option of establishing ranges of the control device operating ranges on the basis of data derived from previous performance tests

or specially-conducted performance tests. Any exceedance of those ranges would be considered a violation of the numerical limit of the applicable standard.

Compliance with the limitations upon MIBK emissions would be established through inventory and production records and through daily measurements of process parameters.

*D. Monitoring Requirements*

The proposed monitoring provisions require the owner or operator to continuously monitor the pressure drop and liquid flow rate of scrubbing devices used to control total fluorides or particulate matter. The feed rate of raw materials to the processes would also be continuously monitored.

For PPA plants that emit MIBK, the standards would require continuous monitoring of chiller stack temperature and daily monitoring of MIBK concentrations at two points in the process.

As required by the NESHAP General Provisions (40 CFR part 63, subpart A), the owner or operator also must develop and implement a Startup, Shutdown, and Malfunction Plan.

*E. Notification, Recordkeeping, and Reporting Requirements*

All notification, recordkeeping, and reporting requirements in the General Provisions would apply to phosphoric acid manufacturing and phosphate fertilizers production facilities. These include: (1) initial notification(s) of applicability, notification of performance test, and notification of compliance status; (2) a report of performance test results; (3) a Startup, Shutdown, and Malfunction Plan with semiannual reports of reportable events (if they occur); and (4) semiannual reports of excess emissions. If excess emissions are reported, the owner or operator must report quarterly until a request to return the reporting frequency to semiannual is approved.

The NESHAP General Provisions (40 CFR part 63, subpart A) require that records be maintained for at least 5 years from the date of each record. The owner or operator must retain the records on site for at least 2 years but may retain the records off site the remaining 3 years. The files may be retained on microfilm, microfiche, on a computer, on computer disks, or on magnetic tape disks. Reports may be made on paper or on a labeled computer disk using commonly available and compatible computer software.

IV. Selection of Proposed Standards

*A. Selection of Source Categories*

Section 112(c) of the Act directs the Agency to list each category of major and area sources, as appropriate, emitting one or more of the 189 HAPs listed in section 112(b) of the Act. The EPA published an initial list of source categories on July 16, 1992 (57 FR 31576), and may amend the list at any time. ''Phosphoric acid manufacturing and phosphate fertilizers production'' are two of the 174 categories of sources listed in the notice.

For this study, EPA collected information and data through the following: (1) review of existing literature; (2) visits to State air pollution control agencies to obtain plant-specific test data and permits; (3) visits to three plant sites; (4) meetings with representatives of individual companies; (5) meetings with The Fertilizer Institute, an industry trade organization; and (8) meetings with State air pollution control agency personnel. Based on this information and data, EPA believes that 15 facilities may be major sources subject to the NESHAP. As defined in the Act, a major source must have the potential to emit 9.1 Mg/yr (10 tpy) or more of a single HAP or 22.7 Mg/yr (25 tpy) or more of a combination of HAPs.

On December 3, 1993 (58 FR 63941), EPA published a schedule for the promulgation of standards for the sources selected for regulation under section 112(c) of the Act. According to this schedule, MACT standards for this source category must be promulgated no later than November 15, 2000. If standards are not promulgated by May 15, 2002 (18 months following the promulgation deadline), section 112(j) of the Act requires States or local agencies with approved permit programs to issue permits or revise existing permits containing either an equivalent emission limitation or an alternate emission limitation for HAP control.

Section 112 of the Act requires the Agency to establish national standards to reduce air emissions from major sources and certain area sources that emit one or more HAP. Section 112(b) contains a list of HAP to be regulated by NESHAP. Section 112(c) directs the Agency to use this pollutant list to develop and publish a list of source categories for which NESHAP will be developed and a schedule for development of those NESHAP. The Agency must list all known source categories and subcategories of ''major sources'' that emit one or more of the listed HAP. A major source is defined in section 112(a) as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit in the aggregate, considering controls, 10 tons per year or more of any one HAP or 25 tons per year or more of any combination of HAP. This list of source categories was published in the Federal Register on July 16, 1992 (57 FR 31576) and includes phosphoric acid manufacturing and phosphate fertilizers production.

For area sources, the Agency examined available data on facilities, emissions, and health and environmental effects of emitted HAPs and concluded that there is no threat of adverse effects to human health or the environment from the area sources in these two source categories. Consequently, the Agency decided not to list the area sources.

*B. Selection of Emission Sources and Pollutants*

While phosphoric acid manufacturing and phosphate fertilizers production facilities are listed separately for the purposes of section 112 (c) of the Act, they are generally collocated. Phosphoric acid manufacturing facilities provide feedstock for phosphate fertilizer production facilities and much of the phosphoric acid produced in the United States is consumed in the manufacture of fertilizers. Thus, the Agency has chosen to regulate component processes of both source categories through a combined rulemaking action. This course of action was previously adopted when the Agency promulgated new source performance standards (NSPS) (see 40 FR 33152) to limit emissions of total fluoride compounds (which include the HAP HF) from several processes in the phosphate fertilizers industry. The NSPS apply to processes units producing WPPA, SPA, DAP, and GTSP, including GTSP storage buildings.

Once source categories have been listed as major for one or more HAPs, the Act requires that the Agency establish emission limits for all HAP-emitting units at sources within the source category regardless of whether or not those individual units emit HAPs in major quantities. An exception to this occurs when the Agency has listed specific types of sources as major sources and is developing a separate rule for those individual sources. Examples are boilers and cooling towers. For phosphoric acid manufacturing, the Agency explored the need to establish standards for phosphate rock drying and calcination (arsenic, beryllium, cadmium,

chromium, manganese, mercury, and nickel (HAP metals) emissions), WPPA manufacturing (HF emissions), SPA manufacturing (HF emissions), thermal process SPA (phosphorous emissions), and solvent extracted SPA (methyl isobutyl ketone (MIBK) emissions) which is commonly referred to as purified phosphoric acid (PPA).

A review of information for existing thermal process acid plants indicated that none are major sources of HAP emissions nor are they collocated with major sources. The potential for emissions of the HAP phosphorous is quite minimal because phosphorous is extremely reactive with oxygen and, therefore, does not exist in nature as a pure substance. Many plants previously in service have been closed due to economic pressures and no new ones are expected to be built. Since no existing thermal process plants are major sources and no new ones are to be built, there is no benefit to be derived from the development of applicable NESHAP. Given that the manufacture of WPPA, SPA, and PPA cause emission of significant quantities of HAPs and the availability of emission control systems, the Agency elected to develop and propose NESHAP for manufacture of those three products.

The phosphate fertilizers production source category potentially includes production of DAP, MAP, GTSP, normal superphosphate (NSP), and ammonium polyphosphate (APP). No NESHAP were developed for the NSP process because no production occurs at major sources and no stand-alone major sources were identified. Standards were not developed for APP production because the pollutant of concern is ammonia which is not a listed HAP. For the other phosphate fertilizers production processes, emissions limits were developed and are being proposed in today's action.

Today's action proposes NESHAP that would be applicable to new and existing major sources emitting HAP from the phosphoric acid manufacturing and phosphate fertilizers production source categories. For major sources, the rules would apply to each of the following affected sources: (1) WPPA plants; (2) SPA plants; (3) PPA plants; (4) phosphate rock dryers; (5) phosphate rock calciners; (6) DAP/MAP plants; (7) GTSP plants; and (8) GTSP storage facilities. The proposed emission limits are based on an analysis of the available emission test data from the various types of sources present in the source categories. Except for PPA plants, phosphate rock dryers, and phosphate rock calciners, the potentially affected units listed above are subject to NSPS and State regulations which limit emissions of total fluorides. The Agency test methods used to determine compliance with the NSPS measure total fluoride and are not specific to the HAP HF. At the time data were collected for this action, many sources affected by today's proposal were subject to either NSPS or State regulations. No performance test data were provided which specifically measured the HAP HF. Therefore, the database contains many performance tests for total fluorides and none for HF. To support a State air toxics permit application, one company performed tests which indicated that the HF content of emissions from WPPA plants can vary from 28 to 49 percent of total fluoride emissions depending upon whether the phosphate rock has been calcined (docket item II–I–32 cc). Since the wet scrubbing systems used for control of total fluorides are effective at reducing HF emissions, the Agency chose to use total fluorides as a surrogate for HF for those classes of sources for which HF is the regulated pollutant. This approach allows use of the available test data for establishing the MACT level of control and it provides consistency with current Federal and State permits. It would also result in a common basis for permitting in those cases where sources would continue to be covered by existing regulations but not be subject to NESHAP due to their nonmajor status.

Particulate emissions from phosphate rock dryers and calciners, contain HAP metals. Particulate matter emissions from dryers include arsenic, beryllium, cadmium, chromium, manganese, mercury, and nickel. Particulate matter emissions from calciners include arsenic, beryllium, chromium, manganese, mercury, and nickel. However, there are no stack test data specific to HAP metals. All permits and test data are for particulate matter. In the absence of detailed information on HAP metals emissions, the MACT floor has been determined using particulate matter as a surrogate for HAP metals. Accordingly, the proposed emissions limits are expressed as particulate matter.

One PPA plant is a major source of MIBK emissions. For that source, there is sufficient information to directly establish NESHAP for MIBK.

### *C. Selection of Proposed Standards for Existing and New Sources*

#### 1. Background

After EPA has identified the specific source categories or subcategories of major sources to regulate under section 112, it must set MACT standards for each category or subcategory. Section 112 establishes a minimum baseline or ''floor'' for standards. For new sources, the standards for a source category or subcategory cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. [See section 112(d)(3).] The standards for existing sources can be less stringent than standards for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources for categories and subcategories with 30 or more sources, or the best-performing 5 sources for categories or subcategories with fewer than 30 sources.

After the floor has been determined for a new or existing source in a source category or subcategory, the Administrator must set MACT standards that are no less stringent than the floor. Such standards must then be met by all sources within the category or subcategory. In establishing the standards, EPA may distinguish among classes, types, and sizes of sources within a category or subcategory. [See section 112(d)(1).]

The next step in establishing MACT standards is traditionally the investigation of regulatory alternatives. With MACT standards, only alternatives at least as stringent as the floor may be selected. Information about the industry is analyzed to develop model plants for projecting national impacts, including HAP emission reduction levels and cost, energy, and secondary impacts. Several regulatory alternative levels (which may be different levels of emissions control, equal to or more stringent than the floor levels) are then evaluated to select the regulatory alternative that best reflects the appropriate MACT level. The selected alternative may be more stringent than the MACT floor, but the control level selected must be technically achievable. The regulatory alternatives selected for new and existing sources may be different because of different MACT floors, and separate regulatory decisions may be made for new and existing sources.

The Agency may consider going ''beyond-the-floor'' to require more stringent controls. Here, EPA considers the achievable emission reductions of HAPs (and possibly other pollutants that are co-controlled), cost and economic impacts, energy impacts, and other non-air environmental impacts. The objective is to achieve the maximum degree of emissions reduction without unreasonable economic or other impacts. [See section 112(d)(2).]

Subcategorization within a source category may be considered only when there is enough evidence to demonstrate clearly that there are significant differences among the subcategories. The criteria to consider include process operations (including differences between batch and continuous operations), emission characteristics, and control device applicability.

The EPA examined the processes, the process operations, and other factors to determine if separate classes of units, operations, or other criteria have an effect on air emissions. For phosphoric acid manufacturing and phosphate fertilizers production plants, characteristics of emissions streams and, therefore, effectiveness of control technologies are differentiated by the products being manufactured. Thus, in this rulemaking, the Agency has adopted the overall approach used in the previous development of NSPS and developed proposed emissions limits for major unit operations that manufacture specific products.

2. Emission Limits—General

For existing sources, § 112(d)(3) of the Act requires that the Agency establish NESHAP no less stringent than ''the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has information).'' This language has led to two differing interpretations of the intent of the CAA language. One interpretation is that the Act requires the Agency to establish MACT on the basis of permitted emissions limits. The other interpretation holds that MACT must be established on the basis of actual emissions as established through emissions test data. In the document ''Municipal Waste Combustion: Background Information for Promulgated Standards and Guidelines—Summary of Public Comments and Responses,'' EPA–453/R–95–0136, October 1995, published in support of the December 19, 1995 Federal Register notice (60 FR 65387) for promulgated standards of performance for new municipal waste combustors (MWC) and emission guidelines for existing MWC, the Agency discussed the legislative history and relevant case law at some length. In that discussion, the Agency concluded that Congress did not directly speak to the question at issue. The discussion was focused upon § 129 of the Act. Since sections 129 and 112 are quite similarly worded, the same approach is being applied in this instance. Accordingly, the Agency has applied the test from *Chevron* v. *NRDC,* 467 U.S. 837 (1984) that its interpretation of the Act must be a ''permissible construction'' of the statute.

In this instance, the Agency first notes that it was the clear intent of Congress that, when possible, NESHAP are to be numerical limitations derived from the application of emissions control technologies. As was described above, for existing sources, the limitations may be no less stringent than the average level of control achieved by the best controlled twelve percent of those sources. This is commonly referred to as the MACT floor. As a starting point, the Agency attempted to identify the technology applied to achieve the lowest emissions. Since the HAP HF was the main concern for this standard, the initial approach was focused upon determining MACT for HF. The same approach was later extended to HAP metals for subsequent analyses. After thoroughly searching for studies which directly measured stack emissions of HF, the Agency concluded that there is a paucity of definitive data as to the exact amount of HF actually being emitted, although, as was previously noted, the HF content potentially ranges from 28 to 49 percent of total fluoride. This finding led the Agency to look for other means to establish a technical basis for NESHAP. During its information collection effort, the Agency found that there is a large body of existing data for the surrogate pollutant total fluoride, which the Agency previously designated for control under § 111 of the Act through the development of NSPS. Those NSPS are emissions limitations based upon demonstrated technologies. Given a paucity of direct data on HF emissions and a large body of data developed to demonstrate achievement of permitted emissions which include HF as a component of total fluorides, the Agency chose to use total fluoride as a surrogate for HF in its analyses. By adopting the approach of regulating total fluoride as surrogate for HF, the Agency avails itself of information reflecting the effect of over twenty years of implementation of NSPS and emissions guidelines (EG) which are technology-based standards. The Agency has obtained a wealth of performance data derived from emissions tests conducted to establish compliance with permitted emissions limitations required by NSPS and with State-permitted emissions limitations developed pursuant to EG for previously existing sources. Reviewing this information base reveals that, in general, the best controlled sources for the various processes used differently configured combinations of wet scrubbing devices. Several different types and configurations of wet scrubbing devices were found to give high levels of removal of fluorides. For most sources, the control systems were designed to achieve emissions limits equal to or more stringent than the NSPS. For this rulemaking, the Agency has concluded that permitted emissions constitute the emissions limits which the technological controls were designed to achieve. To determine emissions limits corresponding to MACT floors, the Agency first identified the median of the top twelve percent of permits issued for the best controlled sources for each process. Generally, this resulted in the identification of the third of the five most stringently permitted sources for a given process. After thus identifying the best controlled sources and establishing preliminary MACT floors, the Agency then used the available test data to ascertain that the permit limits were being achieved and to determine if greater degrees of control were actually being achieved in practice. For sources of total fluorides, the range of the available test data showed that the permitted emissions were reflective of the degree of emissions control actually being achieved.

For phosphate rock dryers and calciners, the MACT floors were established using particulate matter as a surrogate for HAP metals. For dryers, there was very little available test data. So, the MACT floor analysis was performed using permitted emissions of particulate matter. For calciners, there were numerous test reports for particulate matter. The permits for calciners were all based upon general process rate allowances which were not developed specifically for phosphate rock calcining. Test data showed that the permits do not reflect the level of emissions reductions achieved in practice. So, for calciners, the MACT analysis was based upon the test data.

One source manufactures a purified phosphoric acid through a solvent extraction method. The plant emits MIBK, which is a HAP. The source has modified its process several times to improve capacity and there is no information which the Agency can use to determine the effects of those modifications upon emissions as determined from inventory records. Therefore, MACT was determined on the basis of the original permitted emissions. Those limits were based upon the engineering design of the controls built into the plant. To that permitted amount, the Agency added an allowance for fugitive emissions of

MIBK known to occur because of utilization of a waste stream in an adjoining fertilizer plant. The permitted emissions were added to the fugitives and divided by permitted production capacity to calculate a unit emissions factor for MIBK based upon the input of $P_2O_5$.

For new sources, the most stringent permit issued for any given process was adopted as MACT, except for calciners. The calciners limit was based upon test data. Performance test data are presented in the TSD and show that the most stringent permit limits are being achieved in practice.

Having thus identified the floor level of control, the Agency then considered the possibility of setting more stringent limitations. As a part of that consideration, the Agency modeled MACT floor level emissions of HF for the purpose of quantifying potential health concerns. For HF, there is no Agency-approved health bench mark with which to identify potential public exposure and risk problems. A screening level exposure analysis was performed using State agency health bench marks and no health concerns were identified (docket item II–B–14). In addition, the Agency reviewed a detailed exposure and risk assessment performed for a source subject to State air toxics requirements which reached this same conclusion (docket item II–I–32 cc). Besides exploring potential health impacts for HF, the Agency also examined modeling performed by a source for trace metal emissions from calciners subject to the MACT floor level of control. Estimated health risks were minimal. None of the health impacts analyses for existing sources indicated a need to control emissions beyond the levels corresponding to the MACT floors. Therefore, the Agency proposes to establish limits for existing major sources at the floor levels.

During the analysis of public health impacts, the Agency also considered the need for area source standards. A screening level exposure analysis using a ten ton per year of HF model plant and State agency health bench marks did not identify ''a threat of adverse effects to human health or the environment (by such sources individually or in the aggregate).'' Therefore, the Agency does not recommend listing area sources and developing standards.

3. Emission Limits for Classes of Sources

WPPA Plants. The Agency previously promulgated NSPS which limit emissions of total fluorides. Those NSPS appear in 40 CFR Subpart T. For NSPS purposes, a WPPA plant is defined as any plant manufacturing phosphoric acid by reacting phosphate rock and acid. This same definition is applied herein. The NSPS limit total fluoride emissions to 0.02 pounds per ton of $P_2O_5$ fed to the process. At this time there are 35 WPPA plants and permitted emissions range from 0.0135 to 0.69 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Twenty five of those plants are permitted at limits equivalent to or more stringent than the NSPS. All plants employ wet scrubbing devices to control total fluoride emissions.

The Act requires that the MACT floor for existing sources in categories with 30 or more sources must be no less stringent than the average emission limitation achieved by the best performing 12 percent of those sources. In this instance, the best performing sources are all subject to permit provisions requiring that they achieve emissions limitations equivalent to or more stringent than the NSPS. For those plants, permitted emissions range from 0.01350 to the NSPS limit of 0.020 pounds of total fluoride per ton of $P_2O_5$ fed to the process. The median of these permit limits is at the NSPS level of control and this was selected as the MACT floor level. The available test data summarized in the TSD show that the plants which form the basis for the MACT floor are achieving the NSPS level of control. Tested emissions for all plants permitted at or below the MACT floor range from 0.0004 to 0.019 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Thus, the emissions limit corresponding to the MACT floor, which is the NSPS, is being proposed as MACT for existing WPPA plants.

For new sources, MACT must be as stringent as the emission limitation that is achieved in practice by the best controlled similar source, as determined by the Administrator. Currently, the most stringent permit for a WPPA plant is for the Cargill Industries facility in Riverview Florida which has been permitted at an emission limitation of 0.01350 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Therefore, this limit is being proposed for new WPPA plants.

During the development of NESHAP, the Agency examined the emission of HF from gypsum and cooling pond systems. Recent testing of pond systems was performed using long path Fourier transform infra-red spectroscopy to typify emissions of HF (docket item II–D–15). The tests indicted that although small quantities of HF may be evolved from pond surfaces, the measured quantities would not be significant in comparison to overall process emissions. The Agency did investigate options for treating pond water to further minimize HF emissions (docket item II–B–9). None of the technologies considered have been successfully demonstrated on a commercial basis when applied to the ores and processes common to the United States. Thus, the Agency concluded that MACT for pond systems is no control.

All the plants which are being used to define MACT discharge scrubber effluent to cooling ponds. Four sources subject to the NSPS pump effluent from scrubbers to evaporative cooling towers where the collected fluorides are subjected to air stripping. This practice renders the air pollution controls largely ineffective for their intended purpose. Accordingly, the proposed NESHAP specifically prohibits this practice. The plants affected by the proposed NESHAP have other options available, such as discharging scrubber effluents to gypsum ponds. This requirement would be applied to both WPPA and SPA plants. The Agency notes that this provision will apply only to liquid discharges from air pollution control devices and is not intended to apply to process equipment.

SPA Plants. The Agency previously promulgated NSPS which limit emissions of total fluorides. Those NSPS appear in 40 CFR Part 60, Subpart U. The NSPS limit total fluoride emissions to 0.01 pounds per ton of $P_2O_5$ fed to the process. For NSPS purposes, an SPA plant is defined as any facility which concentrates WPPA to 66 percent or greater $P_2O_5$ content for eventual consumption as fertilizer. For purposes of the proposed NESHAP, the basic NSPS definition for the plant will be adopted but it will not be limited to production of SPA for consumption as fertilizer. The end use of the manufactured SPA is not relevant to the need to control HAP emissions pursuant to the Act. With the exception of one source employing the submerged combustion process, all producers in the United States employ vacuum evaporation to make SPA. The best-controlled plants for which data were available use the vacuum evaporation process. There are twelve SPA plants using vacuum evaporation and permitted emissions range from 0.0087 to 1.1 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Nine of those plants are permitted at limits equivalent to or more stringent than the NSPS. All plants employ wet scrubbing devices to control total fluoride emissions. Several different scrubber designs are employed.

The Act requires that the MACT floor for existing sources in categories with fewer than 30 sources must be no less stringent than the average emission

limitation achieved by the best performing five of those sources. In this instance, the five best performing sources are all subject to permit provisions requiring that they achieve emissions limitations equivalent to or more stringent than the NSPS. The median of these permit limits is at the NSPS level of control, 0.01 pounds per ton of $P_2O_5$ fed to the process, and this was selected as the MACT floor level. The available test data summarized in the TSD show that the plants which form the basis for the MACT floor are achieving the NSPS level of control. Tested emissions for all plants permitted at or below the MACT floor range from 0.00013 to 0.00847 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Thus, the emissions limit corresponding to the MACT floor, which is the NSPS, is being proposed as MACT for existing SPA plants that use the vacuum evaporation process.

The one source which manufactures SPA using a variation of the submerged combustion process requested that the Agency consider a separate subcategory for the process on the basis that a combination of feedstock, final product, and process requirements uniquely influences the level of control achievable at that site. The source provided information (docket item II–D–52) showing that their imported feedstock differs from that of other domestic producers of SPA in that it contains lesser amounts of impurities including radium and magnesium. The lesser amounts of radium are beneficial from the perspective that this reduces the radioactivity of the phosphogypsum waste material resulting from the processes. The lowered magnesium content is important to customers with whom the source has contractual obligations. The negative result of the lesser magnesium content is that it causes increased corrosivity of the acid manufactured at that site. Engineering studies have been unable to resolve the corrosion problem and, so, the source cannot readily convert its production to the vacuum evaporation process. In discussions with its State agency, the source has committed itself to install new air pollution controls and has performed engineering analyses which indicate that the source cannot meet the MACT performance level of the vacuum evaporation process. The potential to meet a level of 0.20 pounds of total fluoride per ton of $P_2O_5$ fed to the process has been successfully tested in a pilot test. In consideration of the overall environmental and technical factors unique to the existing operations of that source, the Agency has determined that subcategorization of that one existing source is appropriate and that MACT is 0.20 pounds of total fluoride per ton of $P_2O_5$ fed to the process for existing operations. For a new SPA plant at that site, the Agency would expect that the source could avail itself of the same resources as other companies in the industry and that no special consideration would be appropriate.

For new sources, MACT must be as stringent as the emission limitation that is achieved by the best controlled similar source, as determined by the Administrator. Currently, the best controlled SPA plant achieves a permitted emission limit of 0.0087 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Emissions test data confirm that this level of control is being achieved in practice. Therefore, this limit is being proposed for new SPA plants.

DAP/MAP Plants. The Agency previously promulgated NSPS which limit emissions of total fluorides from DAP production. Those NSPS appear in 40 CFR Part 60, Subpart V. The NSPS limit total fluoride emissions to 0.06 pounds per ton of $P_2O_5$ fed to the process. For NSPS purposes, a DAP plant is defined as any plant manufacturing granular DAP by reacting phosphoric acid with ammonia. The NSPS do not include MAP production plants as affected facilities. Available information shows that many production plants are dedicated to produce either DAP or MAP. Other plants are configured and permitted to produce either product using the same equipment. As a part of the Agency's MACT partnership initiative, the Agency met with State agency and industry representatives to discuss issues pertinent to the proposed NESHAP. Several discussions addressed the question of whether to have separate rules for DAP, MAP and combined DAP/MAP production plants. During those discussions it was noted that the plant configurations used to make either one or both products are essentially identical. All plants employ wet scrubbing devices to control total fluoride emissions. Several different scrubber designs were employed. During the MACT partnership discussions, the Agency was advised that technical considerations cause a dual use production plant to be more difficult to control than those dedicated to individual products. All parties to the discussion were in agreement that the current NSPS for DAP is achievable for DAP, MAP or combined DAP/MAP production. After due consideration of these factors, the Agency is proposing that a single emissions limitation should be applied to this class of ammoniated phosphates. Accordingly, the data for plants permitted to produce both products were selected for analysis to establish the MACT floor.

There are 12 plants permitted to produce both DAP and MAP. For those plants, permitted emissions range from 0.0580 to 0.9640 pounds of total fluoride per ton of $P_2O_5$ fed to the process. The Act requires that the MACT floor for existing sources in categories with fewer than 30 sources must be no less stringent than the average emission limitation achieved by the best performing five of those sources. In this instance, the five best performing sources are all subject to permit provisions requiring that they achieve emissions limitations equivalent to or more stringent than the NSPS. For those plants, permitted emissions range from 0.0580 to the NSPS limit of 0.06 pounds of total fluoride per ton of $P_2O_5$ fed to the process. The median of these permit limits is at the NSPS level of control and this was selected as the MACT floor level. The available test data summarized in the TSD show that the plants which form the basis for the MACT floor are achieving the NSPS level of control. Tested emissions for all plants permitted at or below the MACT floor range from 0.0021 to 0.0408 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Thus, the emissions limit corresponding to the MACT floor, which is the NSPS, is being proposed as MACT for existing DAP and/or MAP plants.

For new sources, MACT must be as stringent as the emission limitation that is achieved by the best controlled similar source, as determined by the Administrator. Currently, the best controlled combined DAP/MAP plant achieves a permitted emission limit of 0.00580 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Emissions test data confirm that this level of control is being achieved in practice. Therefore, this limit is being proposed for new sources producing DAP and/or MAP.

GTSP Production Plants. The Agency previously promulgated NSPS which limit emissions of total fluorides from triple superphosphate production. Those NSPS appear in 40 CFR Part 60, Subpart W. The NSPS limit total fluoride emissions to 0.2 pounds per ton of $P_2O_5$ fed to the process. For NESHAP purposes, a GTSP plant would be defined as any plant manufacturing GTSP by reacting phosphate rock with phosphoric acid. At this time, there are ten GTSP plants and permitted

emissions range from 0.1230 to 0.760 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Seven of those plants are permitted at limits equivalent to or more stringent than the NSPS. Six of those plants are permitted at State limits below the NSPS. All plants employ wet scrubbing devices to control total fluoride emissions. Several different scrubber designs are employed.

The Act requires that the MACT floor for existing sources in categories with fewer than 30 sources must be no less stringent than the average emission limitation achieved by the best performing five of those sources. In this instance, the five best performing sources are all subject to permit provisions requiring that they achieve emissions limitations equivalent to or more stringent than the NSPS. The median of the permit limits for the five best controlled existing plants is 0.150 pounds of total fluoride per ton of $P_2O_5$ fed to the process and this was selected as representing the MACT floor level of control. The available test data summarized in the TSD show that the plants which form the basis for the MACT floor are achieving the permit limit of 0.150 pounds of total fluoride per ton of $P_2O_5$ fed to the process in practice. Tested emissions for all plants permitted at or below the MACT floor range from 0.00845 to 0.148 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Thus, an emissions limit equivalent to the MACT floor is being proposed for existing GTSP plants.

For new sources, MACT must be at least as stringent as the emission limitation that is achieved by the best controlled similar source, as determined by the Administrator. Currently, the best controlled GTSP plant achieves a permitted emission limit of 0.01230 pounds of total fluoride per ton of $P_2O_5$ fed to the process. Emissions test data confirm that this level of control is being achieved in practice. Therefore, this value is being proposed as an emissions limit for new GTSP plants.

GTSP Storage Buildings. The Agency previously promulgated NSPS which limit emissions of total fluorides from GTSP storage buildings. Those NSPS appear in 40 CFR Part 60, Subpart X. The NSPS limit total fluoride emissions to $5.0 \times 10-4$ pounds per hour per ton of $P_2O_5$ stored. For NESHAP purposes, the same definition used in the NSPS will be used for GTSP storage buildings. At this time there are seven GTSP storage buildings in operation. Of the seven, four are equipped with wet scrubbers to control fluoride emissions. These provide the control technology basis for the MACT floor. In general, the permitted emissions limits reflect apportionments assigned by the operators to meet emissions limitations for their GTSP plants as a whole. Thus, the emissions limits are not based upon the technological performance of control systems. The State air pollution control agency with jurisdiction over most of the sources was contacted and indicated that impacts of emissions from the storage buildings had been considered as a part of the overall emissions allowances for the fertilizer plants. None of the seven existing GTSP storage buildings is subject to the NSPS. Further, the applicable emissions limitations for the controlled buildings are in a format which differs from the NSPS. Permitted emissions are dependent upon the rate at which GTSP is transferred into the buildings. Available data indicate that the actual emission rates are comparable to the NSPS limits.

The Agency previously addressed the issue of determining the best technological approach for establishing emission limits for GTSP storage buildings during the development of the NSPS in 40 CFR Part 60, Subpart X. Those standards reflect the previous judgement of the Agency as to the best approach to controlling emissions of total fluorides from GTSP storage buildings. That same judgement was reflected in the Agency's emissions guidelines for then-existing sources. During development of the proposed NESHAP, the Agency requested the opinions of State air pollution control agencies and the technical representatives of companies which produce phosphate fertilizers. The State representatives concluded that the NSPS approach to setting emissions limits is preferable to the basis for the permitted emissions in that it is clearly based upon technological considerations. The industry representatives noted that the NSPS approach accounts for the effects of the continued curing of GTSP during initial storage and the NSPS also provides consideration of the amount of GTSP stored. Given the similarity of the results of the two approaches and the clear preference of the involved parties for the NSPS format, the Agency has concluded that the NSPS best expresses the MACT floor level of control for existing GTSP storage buildings. Should any new GTSP storage buildings be placed in service, the Agency continues to believe that the NSPS also constitutes the best approach to new source MACT. The NSPS is based upon a demonstrated control technology and directly ties allowable emissions to the quantity of GTSP in storage. Thus, existing and new source MACT is proposed to be a maximum emission of $5.0 \times 10-4$ pounds of total fluorides per hour per ton of $P_2O_5$ stored.

During the development of the NESHAP, the question was raised as to whether the proposed NESHAP should be applied to GTSP storage buildings which are not co-located with GTSP production plants. The Agency has concluded that the proposed NESHAP should only apply to co-located storage buildings. The reason for this is that the reactions which cause emissions of HF and total fluorides continue for several days after newly manufactured GTSP is placed into storage. This is referred to as curing. Thus, there is a clear reason to place emissions limits upon this class of sources. Opinions differed as to how long appreciable emissions are generated. Material handling problems can occur if GTSP is shipped from the production plant prior to the completion of the curing phase. So, the need for controlling emissions during storage coincides with the need to allow time for curing. Accordingly there is no benefit to be gained from applying the proposed NESHAP to GTSP storage facilities that handle only cured GTSP and are not located at GTSP production plants.

Phosphate Rock Dryers at Phosphoric Acid Manufacturing Plants and Phosphate Fertilizers Production Plants. On April 16, 1982, the Agency promulgated emissions limits (47 FR 16589) which apply to phosphate rock dryers at phosphate rock plants as 40 CFR Part 60 Subpart NN. The NSPS limit particulate matter emissions to 0.030 kilogram per megagram of phosphate rock feed (0.060 pounds per ton). For NSPS purposes, a dryer is defined as a unit in which the moisture content of phosphate rock is reduced by contact with a heated gas stream. For the proposed NESHAP, the NSPS definition will be adopted. The Agency has found little test data for particulate matter emissions. Initially available permit information indicated that eight dryers were present at seven major sources. One of those dryers is subject to Subpart NN. More recent information provided by industry representatives indicates that two of those dryers have been demolished and that two others are not used as rock dryers. That leaves four dryers from which to establish the MACT floor for existing sources.

The Act requires that the MACT floor for existing sources in categories with fewer than 30 sources must be no less stringent than the average emission limitation achieved by the best performing five of those sources. In this instance, there are only four sources. To

provide consistency with the methodology used elsewhere in this notice, the third or ''median'' dryer was selected as representing the floor level of control. That dryer is limited to 0.215 pounds of particulate matter per ton of rock fed. With no additional information available, the Agency is unable to conclude that a more stringent emissions limit is warranted for dryers. Thus, the emissions limit corresponding to the MACT floor is being proposed as MACT for existing phosphate rock dryers at phosphoric acid manufacturing plants.

For new sources, MACT must be at least as stringent as the emission limitation that is achieved by the best controlled similar source, as determined by the Administrator. Currently, the best controlled dryer achieves a permitted emission limit of 0.060 pounds of particulate matter per ton of rock fed to the process. Emissions test data confirm that this level of control is being achieved in practice. Therefore, this value is being proposed as MACT for new phosphate rock dryers at phosphoric acid manufacturing plants.

Calciners at Phosphoric Acid Manufacturing Plants. On April 16, 1982, the Agency promulgated emissions limits (47 FR 16589) which apply to phosphate rock calciners at phosphate rock plants as 40 CFR Part 60 Subpart NN. For NSPS purposes, a calciner is defined as a unit in which the moisture and organic matter of phosphate rock is reduced within a combustion chamber. For the proposed NESHAP, the NSPS definition will be adopted. Information gathered during the development of proposed NESHAP show that calciners are present at four major sources. None of those calciners are subject to Subpart NN. As previously discussed, the Agency chose to use particulate matter as a surrogate for HAP metal compounds because no speciated test data were available for calciners. All plants use wet scrubbers to control particulate matter. Calciners permitted to operate at one source are not in service at this time. A second source operates two calciners controlled by wet scrubbers. No performance data were available for the second source. A third source operates a calciner controlled by a wet scrubber. Performance test data for the calciner are included in the docket. A fourth source operates six calciners. The calciners are similar in their design and emissions controls. Performance test data for those six are summarized in the TSD. Although speciation factors for HAP metals were available for the fourth source, the enforceable permit limits were for particulate matter. Given that the controls are the same for the best five units, the MACT floor level of control is based upon the use of wet scrubbers. The best performing calciners are permitted in a process rate format which allows the emissions rate to vary as function of process feed rate. For this class of sources, performance data show actual emissions to be well below permitted levels. The Agency has concluded that analysis of test data would best characterize the level of control being achieved in practice. Review of test data indicates that an emission limit equivalent to 0.06 grains of particulate matter per dry standard cubic foot (gr/dscf) is now being achieved by all calciners for which the Agency has data. This level of control was selected as the MACT floor for existing sources. The highest test data point for the calciners constituting the MACT floor was 0.058 gr/dscf. The Agency reviewed health impacts modelling provided by the fourth source and concluded that an ample margin of safety is provided at the MACT floor and that a more stringent standard for existing sources is not indicated. Thus, an emissions limit equivalent to the MACT floor is being proposed for existing calciners.

Emissions test data for the best performing calciner indicated that it could meet a somewhat lower emission limit and that this could be considered the best controlled source for establishing new source MACT. The data showed that a similar new source could achieve an emission limit of 0.04 grains per dry standard cubic foot. This level of control is consistent with that which the Agency selected as best demonstrated technology for similar sources in the NSPS for calciners and dryers in the mineral industries (40 CFR Part 60, Subpart UUU). That standard was promulgated on September 28, 1992 in 57 FR 44503. Thus, the Agency is proposing 0.040 grains per dry standard cubic foot as MACT for new calciners located at phosphoric acid manufacturing plants.

PPA Plants. Two sources in the United States manufacture PPA through the use of solvent extraction to further refine WPPA. One plant uses the HAP compound MIBK as a solvent. This results in permitted losses of MIBK which total approximately 29 tons per year. The second plant uses a different solvent and a different process from which no HAPs are emitted. The Act does not provide clear guidance on the establishment of MACT when less than five sources are present for floor analysis. In this instance, the following facts were considered. The two process designs are distinctly different. The owners of the second plant have patented their process and it is not readily available for licensing by competitors. The PPA produced by the source using MIBK is used in applications which differ in their requirements from the PPA produced by the competing source. Information provided by the owners of the plant using MIBK included information showing that reconstructing their plant to use a non-HAP solvent would result in a control cost of $800,000 per ton of MIBK reduced. This would clearly exceed the value of any environmental benefits to be derived. Thus, the Agency elected to set an emissions limit for MIBK based upon a MACT analysis of the one plant which uses that compound.

The initial permit for the PPA plant in question allows the source to emit 19 tons of MIBK per year from the operation of the plant itself. That amount was determined by engineering calculations to predict the performance of the emissions controls installed at the plant. Information provided by the operator shows an estimated 9.9 tons per year of MIBK in a process waste stream being emitted from an adjoining fertilizer plant. The combined total of 28.9 tons of MIBK is equivalent to 0.16864 pounds of MIBK per ton of $P_2O_5$ fed to the process. Information listing historical purchases of makeup MIBK provided by the operators indicates that emissions may have exceeded that rate on several occasions. Additional information from the source shows that several changes to the process have been made to increase production. Insufficient information was provided to allow an analysis of how the process changes are affecting emissions. Likewise, no information has been provided to show what options have or could have been pursued to maintain the permitted emissions levels. Absent any basis for determining that the permitted limits are inconsistent with the emission controls installed at the plant, the Agency has elected to use the approach consistently applied to other phosphoric acid manufacturing processes during this rulemaking and to base MACT upon permitted emissions of MIBK. The MACT limit is proposed as 0.16864 pounds of MIBK per ton of $P_2O_5$ fed to the process. The Agency specifically invites public comment upon this proposed action. Any comments advocating a different standard for emissions of MIBK from PPA plants should be accompanied and supported by data and information that clearly support the commenter's position.

*D. Selection of Test Methods*

Included in the proposed rules are methods for determining initial compliance as well as monitoring, recordkeeping, and reporting requirements. All of these components are necessary to ensure that sources will comply with the standards both initially and over time. The Agency has made every effort to simplify the requirements in the rule. The Agency has also attempted to maintain consistency with existing regulations by either incorporating text from existing regulations or cross-referencing such regulations. Under the proposed rules, total fluoride would serve as a surrogate for HF and particulate matter would serve as a surrogate measure for HAP metals. So, for those standards which would limit emissions of total fluorides or particulate matter, the approaches to testing and monitoring in the corresponding NSPS would be adopted as closely as possible. That is, initial compliance would be determined by a performance test employing Agency Test Method 13 A or B for total fluorides or Method 5 for particulate matter. The owner or operator could also use other alternative test methods subject to approval by the Administrator. The proposed standards would require that sources continuously record and maintain control device pressure drop and liquid flow rate parameters within plus or minus ten percent of the values established during performance testing. Those values would have to be determined concurrently with initial performance testing. The values of the operating parameters would be based upon the average values recorded during three one-hour test runs. This approach to monitoring control device operating parameters and an alternative requested by industry are discussed in the monitoring requirements section of this preamble.

During the development of the proposed NESHAP, two concerns were raised by industry about testing for fluoride emissions. First, the industry suggested that Method 13 B could be simplified. In response, the Agency is proposing to simplify Method 13 B for this source category by eliminating the fusion and distillation steps in the sample preparation. The fusion step is intended to make all fluorides water soluble. For these source categories, preliminary information indicates that all fluorides are water soluble. The distillation step is intended to eliminate analytical interferences. Industry has submitted data that indicates that the distillation step is unneeded for these source categories. At this time the Agency is reviewing data to verify that the requested changes in the test method are reasonable. The changes would not apply to other categories of sources.

The second concern raised was that of how to test uncontrolled GTSP storage buildings using method 13 A or B. Uncontrolled buildings do not have a stack or a single discharge point. Section 63.7 of the general provisions provides that sources may develop site-specific test plans.

The Agency is working with the affected sources and their respective permitting agencies through this site-specific test plan process to develop a consistent methodology for the purpose of determining whether the sources can achieve the emission limits of the proposed standards without add-on controls.

*E. Selection of Monitoring Requirements*

The proposed standards would require that sources continuously monitor and maintain control device operating parameters within plus or minus ten percent of the values established during performance testing. Since control of particulate matter is impaired by a lessening of pressure drop or liquid flow rate, decreases in these parameters indicate a decline in emissions control efficiency. For HF, as determined by total fluoride, the opposite effect can occur. Removal of fluorides by wet scrubbers is enhanced by increased residence time in the control device. So, it is appropriate that an upper bound to pressure drop should be included as a means of maintaining residence time at a value similar to that obtained during the performance test. Similar to the NSPS, the proposed NESHAP would require monitoring of process feed rate.

During development of the proposed NESHAP, industry representatives expressed some concern over EPA's intention to define scrubber monitoring parameter exceedances in excess of plus or minus ten percent of the values established during the most recent performance test as violations. That concern centered upon the possibility that those values could change as a result of equipment or process variables which would not necessarily result in noncompliance with the numerical limits of the standards. They suggested that Agency should allow a grace period for re-testing to determine compliance with the numerical limits of the standard. In particular, the inclusion of the upper bound was questioned. The Agency's response is that the upper limit is appropriate because higher pressure drops could indicate that emissions controls were suffering from a reduction in residence time associated with higher pressure drops or process upsets and the Agency has elected to keep the upper band for parameter excursions because of enforcement concerns. To allay the concerns of industry, the Agency is including in the proposed regulation language which provides a grace period for re-testing under the conditions measured during the exceedance to determine compliance. Upon considering that some sources at relatively remote locations need time to arrange for services of outside test crews, the proposed rule would allow sources thirty days to re-test and demonstrate compliance with the numerical emissions limits. If a source is re-tested within that time period and passes the required test, the exceedances of the parameter limits would not be considered violations of the Act.

Some industry representatives recommended defining the acceptable range of operational parameters on the basis of the ranges resulting from previous or specially-conducted successful performance tests. Initially, the Agency considered this approach and concluded that to require extensive testing to develop operational ranges during performance testing could be construed as burdensome. So, the Agency chose the approach first described in this section as a requirement. In addition, the proposed regulations would allow use of the approach requested by industry, with its attendant costs, as an alternative which sources could choose to employ at their discretion. In particular, the alternative provides flexibility for sources to establish operational ranges for control device parameters on the basis of data derived from multiple performance tests. Operating ranges could based upon values recorded during previous successful performance tests or upon the results of new performance testing conducted specifically for the purpose of establishing operating ranges. Sources would be required to certify that the control devices and processes had not been modified subsequent to the testing upon which the data used to establish the operating ranges were obtained. Following the approval by the permitting authority of operating ranges for the affected source, any three hour averages of the values of total pressure drop or flow rate of the scrubbing liquid in exceedance of the approved operating ranges would constitute violations of applicable emission limits.

For PPA plants, compliance would be determined by inventory records documenting the amounts of MIBK

added to the process as makeup for routine losses from the system. In addition, the source would be required to maintain records of maintenance activities which would include estimates of MIBK losses. The source would be required to document in its inventory any losses from nonroutine equipment failures or malfunctions. On a continuing basis, the source would be required to monitor and record the MIBK content of raffinate, gas chiller temperature and cooling tower losses. Recordkeeping and reporting would be subject to the General Provisions to 40 CFR Part 63.

*F. Selection of Notification, Reporting, and Recordkeeping Requirements*

All requirements of the General Provisions apply under the proposed rule. The General Provisions include requirements for notifications; reports on performance test results; semiannual excess emissions reports; and startup, shutdown, and malfunction plans and reports. Startups, shutdowns, and malfunctions of production lines can occur in this industry. The development and implementation of the plan will aid in reducing emissions from these events and in reducing malfunctions. A semiannual report to EPA is required only in the event a reportable event occurs and the steps in the plan were not followed. Semiannual excess emission reports are required to ensure that the permitting authority is aware of any potential operating or compliance problems at the source.

The proposed rule requires that minimum information and data be maintained in a file available for inspection at the site. Records of control device operational parameters, process feed rate, MIBK addition to PPA plants and MIBK concentrations at specified points would be required to ensure that MACT-level controls are in place and properly operated and maintained.

*G. Solicitation of Comments*

The EPA seeks full public participation in arriving at its final decisions and encourages comments on all aspects of this proposal from all interested parties. Full supporting data and detailed analyses should be submitted with comments to allow EPA to make maximum use of the comments. All comments should be directed to the Air and Radiation Docket and Information Center, Docket No. A–95–33 (see **ADDRESSES**). Comments on this notice must be submitted on or before the date specified in **DATES**.

Commentors wishing to submit proprietary information for consideration should clearly distinguish such information from other comments and clearly label it ''Confidential Business Information'' (CBI). Submissions containing such proprietary information should be sent directly to the Emission Standards Division CBI Office, U.S. Environmental Protection Agency (MD–13), Research Triangle Park, North Carolina 27711, with a copy of the cover letter directed to the contact person listed above. Confidential business information should not be sent to the public docket. Information covered by such a claim of confidentiality will be disclosed by EPA only to the extent allowed and by the procedures set forth in 40 CFR part 2. If no claim of confidentiality accompanies the submission when it is received by EPA, it may be made available to the public without further notice to the commentor.

V. Impacts of Proposed Standards

*A. Applicability*

Currently, 21 phosphoric acid manufacturing and phosphate fertilizers production complexes, owned by 15 companies, are located in seven States. The EPA estimates that five of these plants would need to install better controls on at least one process each to reduce emissions. All plants in the industry would be subject to the proposed standards unless the plant owner or operator demonstrates that the facility is not a major source. The Agency expects that six of the 21 phosphate fertilizers production complexes will be demonstrated to be non-major sources.

*B. Air Quality Impacts*

Nationwide HAP emissions from phosphoric acid manufacturing and phosphate fertilizers production complexes are estimated to be up to 550 Mg/yr (605 tpy) of HF and other HAP at the current level of control. Implementation of the proposed NESHAP would reduce HF emissions by 315 Mg/yr (345 tpy) from currently permitted levels. The corresponding reduction in total fluorides would be 940 Mg/yr (1035 tpy). This would equate to 1570 Mg (1725 tons) of HF and 4700 Mg (5175 tons) of total fluoride over the first five years of the proposed standards. Since the PPA plant emitting MIBK and calciners emitting HAP metals in the form of particulates would meet the NESHAP in their current configurations, no additional emissions reductions would be gained from those operations. The proposed NESHAP would ensure that the currently installed control systems would be properly operated and maintained. Additional information on emissions and emission reductions is included in the TSD.

*C. Water Impacts*

As a result of NESHAP, five plants would install five to six low energy scrubbers using recycled pond water as the scrubbing liquid would result from NESHAP. Most, if not all, new scrubbers would employ cooling pond water as the scrubbing fluid and return the scrubber discharge to the pond for recycle to the process. The impacts of this would therefore be minimal.

*D. Solid Waste Impacts*

Solid waste impacts would be minimal.

*E. Energy Impacts*

A total of five to six low energy scrubbers would result from NESHAP. Increased power for the scrubbers was estimated to cause an additional annual power consumption of twenty million kilowatt hours.

*F. Nonair Environmental and Health Impacts*

Reducing HAPs and ambient pollutant levels may help lower occupational exposure levels.

*G. Cost Impacts*

The proposed rule would affect phosphoric acid manufacturing and phosphate fertilizers production facilities that are major sources or that are located at major sources. The Agency projects that six process lines at existing source complexes would install new control systems. The Agency estimated that five additional sources would be expected to employ better operation and maintenance practices to meet the standards. Based upon availability of surplus production capacity and recent market trends, the Agency projects that no new facilities will be constructed within the next five years. For the five plants expected to add new air pollution control scrubbers to meet the proposed NESHAP, the capital cost of new control devices is estimated to be $1,401,561. Estimated annualized capital, operation, and maintenance costs of new scrubbers are estimated to total $847,851. The annual costs for the plants expected to implement improved operation and maintenance are estimated to be $14,400. Thus, the total annualized costs of the standards would be $862,251 nationwide.

*H. Economic Impacts*

Prices are expected to increase in each regional market by the per-unit-cost

increase for the marginal firm. Because neither the exact regional structure, nor which firm is the high cost producer within the region, is known, a range of prices changes has been estimated. For the lower estimate, one national market is assumed for each good. The production weighted average cost increase is assumed to be the expected cost increase for the marginal firm and is used for the price increase. The higher estimate has been developed by using the highest cost increase among the facilities as the cost increase for the marginal firm. This makes the highest cost increase the price increase for the national market. Even the highest estimate for the product (MAP/DAP) with the highest cost increase would be a price increase of less than one third of one percent.

Although demand elasticity estimates are not available, the lack of close substitutes, the small cost share of fertilizers in final agricultural products, and the expected low elasticity for the production of food lead to the expectation of an inelastic demand. Since elasticity of demand would be expected to be less than one, percentage quantity adjustments would be expected to be smaller than the percentage price changes discussed above.

Detailed plant information needed for plant closure analysis is not available, but, plant closure as a result of the costs of this regulation would be unlikely. The highest estimate for market quantity adjustment is less than three percent of the production of the smallest affected facility for each of the three markets. If there were to be no market price increase, the cost increase as a percentage of sales would always be less than two-fifths of a percent. While closure due to the regulation would be unlikely, a facility planning to close in the absence of the regulation could close earlier because of the regulation. The effect of this regulation would be expected to be minimal on both small businesses and the industry as a whole.

## VI. Administrative Requirements

### *A. Docket*

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is a dynamic file, because material is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the proposed and promulgated standards and their preambles, the contents of the docket will serve as the record in the case of judicial review. [See section 307(d)(7)(A) of the Act.]

### *B. Public Hearing*

A public hearing will be held, if requested, to discuss the proposed standards in accordance with section 307(d)(5) of the Act. Persons wishing to make oral presentations on the proposed standards should contact EPA (see **ADDRESSES**). If a public hearing is requested and held, EPA will ask clarifying questions during the oral presentation but will not respond to the presentations or comments. To provide an opportunity for all who may wish to speak, oral presentations will be limited to 15 minutes each. Any member of the public may file a written statement on or before February 25, 1997. Written statements should be addressed to the Air and Radiation Docket and Information Center (see **ADDRESSES**), and refer to Docket No. A–95–33. Written statements and supporting information will be considered with equivalent weight as any oral statement and supporting information subsequently presented at a public hearing, if held. A verbatim transcript of the hearing and written statements will be placed in the docket and be available for public inspection and copying, or mailed upon request, at the Air and Radiation Docket and Information Center (see **ADDRESSES**).

### *C. Executive Order 12866*

Under Executive Order 12866 [58 FR 51735 (October 4, 1993)], the Agency must determine whether the regulatory action is ''significant'' and therefore subject to review by the Office of Management and Budget (OMB), and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlement, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, the Agency has determined that this rule is not ''significant'' because none of the listed criteria apply to this action. Consequently, this action was not submitted to OMB for review under Executive Order 12866.

### *D. Enhancing the Intergovernmental Partnership Under Executive Order 12875*

In compliance with Executive Order 12875, the Agency involved State,local and Federal governments in the development of this rule. These governments are not directly impacted by the rule; i.e. they are not required to purchase control systems to meet the requirements of the rule. However, they will be required to implement the rule; e.g. incorporate the rule into permits and enforce the rule. They will collect permit fees which will be used to offset the resource burden of implementing the rule. One representative of a State environmental agency has been a member of the EPA work group developing the rule. In addition, the Agency has contacted the staffs of State air pollution control agencies to exchange information during development of the rule. The comments and suggestions of the State agency staffs have been carefully considered in the rule development. In addition, all States are encouraged to comment on this proposed rule during the public comment period and the Agency intends to fully consider these comments in the final rulemaking.

### *E. Unfunded Mandates Reform Act*

Section 202 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act''), signed into law on March 22, 1995 (109 Stat. 48), requires that the Agency prepare a budgetary impact statement before promulgating a rule that includes a Federal mandate that may result in expenditure by State, local, and tribal governments, in aggregate, or by the private sector, of $100 million or more in any one year. Section 203 requires the Agency to establish a plan for obtaining input from and informing, educating, and advising any small governments that may be significantly or uniquely affected by the rule.

Under section 205 of the Unfunded Mandates Act, the Agency must identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a budgetary impact statement must be prepared. The Agency must select from those alternatives the least costly, most cost-effective, or least burdensome alternative for State, local, and tribal governments and the private sector that

achieves the objectives of the rule, unless the Agency explains why this alternative is not selected or unless the selection of this alternative is inconsistent with law.

Because this proposed rule, if promulgated, is estimated to result in the expenditure by State, local, and tribal governments or the private sector of less than $100 million in any one year, the Agency has not prepared a budgetary impact statement or specifically addressed the selection of the least costly, most cost-effective, or least burdensome alternative. Because small governments will not be significantly or uniquely affected by this rule, the Agency is not required to develop a plan with regard to small governments. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

*F. Regulatory Flexibility Act*

Under the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 *et seq.*, Federal agencies are required to assess the economic impact of Federal regulations on small entities. The Regulatory Flexibility Act specifies that Federal agencies must prepare an initial Regulatory Flexibility Analysis (RFA) if a proposed regulation will have a significant economic impact on a substantial number of small entities.

The Agency has found that two of the twenty one firms that potentially would be subject to the proposed standards are small firms. Of the two, one is an area source which would not be covered by the standards. The second source would be major and subject to the requirements of the standards. Information available to the Agency shows that the second source is able to achieve the control levels of the proposed NESHAP using existing equipment. The testing, monitoring, recordkeeping and reporting requirements are essentially identical to current requirements and, thus, would cause little or no change in these burdens. Therefore, given that only one small entity would see only a minimal change from its current requirements, the Agency certifies that the proposed rulemaking will not impact a substantial number of small entities and that any impacts would be non-significant.

*G. Paperwork Reduction Act*

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1790.01) and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460 or by calling (202) 260–2740.

The information to be collected includes the results of performance testing to be conducted to demonstrate initial compliance with the emissions limits in the proposed rules. At the time that performance testing would be performed, sources would be required to measure and record operating parameters for the processes and control devices. Following the performance testing, sources would be required under authority of the Act to monitor and record operating parameters to assure that they were maintained within approved ranges, based upon values determined during the initial tests. The purpose of the monitoring and recordkeeping requirements would be to provide implementing agencies information to assure that MACT was being implemented on an ongoing basis.

The Agency estimated the projected cost and hour burden of the proposed standards. The average annual reporting burden was estimated to be 132 hours per response. There would be fifteen likely respondents and reports would required twice a year. The total burden would equate to 3790 hours per year nationwide and the corresponding cost was estimated to be $121,773 per year. The total capital cost of the monitoring devices was estimated to be $564, 200 of which the major cost would be for the installation of sensors to measure and record the flow of scrubbing liquid to the control devices. The annualized cost of that capital would be $53,200 per year and the operation and maintenance of the monitoring equipment was estimated as $13,300 per year. Thus, the total annualized capital and operation and maintenance costs were estimated to be $66,500 per year. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, DC 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 27, 1996, a comment to OMB is best assured of having its full effect if OMB receives it by January 27, 1997. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

*H. Clean Air Act*

In accordance with section 117 of the Act, publication of this proposal was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies. This regulation will be reviewed 8 years from the date of promulgation. This review will include an assessment of such factors as evaluation of the residual health risks, any overlap with other programs, the existence of alternative methods, enforceability, improvements in emission control technology and health data, and the recordkeeping and reporting requirements.

*I. Pollution Prevention Act*

During the development of the standards, the Agency explored opportunities to eliminate or reduce emissions through the application of new processes or work practices. As previously discussed, at the outset the Agency explored options for reduction of cooling pond emissions of HF. Among the possibilities was a recently patented process which offers the promise of eliminating the ponds altogether while at the same time

recovery HF for sale to outside parties. At this time that process has not yet been commercially demonstrated.

The other opportunity for prevention of pollution arose when the Agency learned of the piping of air pollution control scrubber effluent to cooling towers, where the HF content was being stripped and emitted to the atmosphere. As previously discussed, the proposed NESHAP would expressly prohibit that practice.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements, Phosphoric acid manufacturing, and Phosphate fertilizers production.

Dated: November 21, 1996.

Carol M. Browner,

*Administrator.*

For the reasons set out in the preamble, it is proposed that part 63 of title 40, chapter I, of the Code of Federal Regulations be amended as follows:

## PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority for part 63 continues to read as follows:

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

2. Part 63 is amended by adding subpart AA consisting of §§ 63.600 through 63.610 to read as follows:

### Subpart AA—National Emission Standards for Hazardous Air Pollutants From Phosphoric Acid Manufacturing Plants

Sec.
63.600 Applicability.
63.601 Definitions.
63.602 Standards for existing sources.
63.603 Standards for new sources.
63.604 Monitoring requirements.
63.605 Performance tests and compliance provisions.
63.606 Notification requirements.
63.607 Recordkeeping requirements.
63.608 Reporting requirements.
63.609 Compliance dates.
63.610 Exemption from new source performance standards.

## Subpart AA—National Emission Standards for Hazardous Air Pollutants From Phosphoric Acid Manufacturing Plants

### § 63.600 Applicability.

(a) Except as provided in paragraph (c) of this section, the requirements of this subpart apply to the owner or operator of each new or existing phosphoric acid manufacturing plant.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAPs) emitted from the following affected sources at a new or existing phosphoric acid manufacturing plant:

(1) Each wet-process phosphoric acid plant. The requirements of this subpart apply to the following emission points which are components of a wet-process phosphoric acid plant: reactors, filters, evaporators, and hot wells.

(2) Each evaporative cooling tower at a phosphoric acid manufacturing plant.

(3) Each phosphate rock dryer located at a phosphoric acid manufacturing plant.

(4) Each phosphate rock calciner located at a phosphoric acid manufacturing plant.

(5) Each superphosphoric acid plant. The requirements of this subpart apply to the following emission points which are components of a superphosphoric acid plant: evaporators, hot wells, acid sumps, and cooling tanks; and

(6) Each purified acid plant. The requirements of this subpart apply to the following emission points which are components of a purified phosphoric acid plant: solvent extraction process equipment, solvent stripping and recovery equipment, seal tanks, carbon treatment equipment, cooling towers, storage tanks, pumps and process piping.

(c) The requirements of this subpart do not apply to the owner or operator of a new or existing phosphoric acid manufacturing plant for which the owner or operator demonstrates, to the satisfaction of the Administrator, that the facility is not a major source as defined in § 63.2.

### § 63.601 Definitions.

Terms used in this subpart are defined in the Clean Air Act, in § 63.2, or in this section as follows:

*Equivalent $P_2O_5$ feed* means the quantity of phosphorus, expressed as phosphorous pentoxide, fed to the process.

*Evaporative cooling tower* means an open water recirculating device that uses fans or natural draft to draw or force ambient air through the device to remove heat from process water by direct contact.

*HAP metals* mean those chemicals and their compounds (in particulate or volatile form) that are included on the list of hazardous air pollutants in section 112 of the Clean Air Act. HAP metals include, but are not limited to: antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium expressed as particulate matter as measured by the methods and procedures in this subpart or an approved alternative method. For the purposes of this subpart, HAP metals are expressed as particulate matter as measured by 40 CFR Part 60, Appendix A, Method 5.

*Phosphate rock calciner* means the equipment used to remove moisture and organic matter from phosphate rock through direct or indirect heating.

*Phosphate rock dryer* means the equipment used to reduce the moisture content of phosphate rock through direct or indirect heating.

*Phosphate rock feed* means all material entering any phosphate rock dryer or phosphate rock calciner including moisture and extraneous material as well as the following ore materials: fluorapatite, hydroxylapatite, chlorapatite, and carbonateapatite.

*Purified phosphoric acid plant* means any facility which concentrates wet-process phosphoric acid to 58 percent or greater $P_2O_5$ content by weight and which uses solvent extraction to separate impurities from the product acid for the purposes of rendering that product suitable for industrial, manufacturing or food grade uses.

*Superphosphoric acid plant* means any facility which concentrates wet-process phosphoric acid to 66 percent or greater $P_2O_5$ content by weight.

*Total fluorides* means elemental fluorine and all fluoride compounds, including the HAP hydrogen fluoride, as measured by reference methods specified in 40 CFR Part 60, Appendix A , Method 13 A or B, or by equivalent or alternative methods approved by the Administrator pursuant to § 63.7(f).

*Wet process phosphoric acid plant* means any facility manufacturing phosphoric acid by reacting phosphate rock and acid.

### § 63.602 Standards for existing sources.

(a) *Wet process phosphoric acid plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 10.0 gram/metric ton of equivalent $P_2O_5$ feed (0.020 lb/ton).

(b) *Superphosphoric acid plant.* (1) On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 5.0 gram/metric ton of equivalent $P_2O_5$ feed (0.010 lb/ton).

(2) Notwithstanding paragraph (b)(1) of this section, on and after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, each submerged combustion process superphosphoric acid plant at the Arcadian Fertilizers facility in Geismar, Louisiana shall not cause to be discharged into the atmosphere any gases which contain total fluorides in excess of 100.0 gram/metric ton of equivalent $P_2O_5$ feed (0.20 lb/ton).

(c) *Phosphate rock dryer.* On or after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain particulate matter in excess of 0.10750 kilogram/metric ton of phosphate rock feed (0.2150 lb/ton).

(d) *Phosphate rock calciner.* On or after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain particulate matter in excess of 0.138 gram per dry standard cubic meter (g/dscm) [0.060 grain per dry standard cubic foot (gr/dscf)].

(e) *Evaporative cooling tower.* No owner or operator shall introduce into any evaporative cooling tower any liquid effluent from any wet scrubbing device installed to control emissions from process equipment.

(f) *Purified phosphoric acid plant.* No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain methyl isobutyl ketone in excess of 84.320 gram/metric ton of equivalent $P_2O_5$ feed (0.16864 lb/ton). Compliance shall be determined as a monthly average based upon records of the addition of methyl isobutyl ketone to the process as required in § 63.605(f).

**§ 63.603 Standards for new sources.**

(a) *Wet process phosphoric acid plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 6.750 gram/metric ton of equivalent $P_2O_5$ feed (0.01350 lb/ton).

(b) *Superphosphoric acid plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 4.35 gram/metric ton of equivalent $P_2O_5$ feed (0.00870 lb/ton).

(c) *Phosphate rock dryer.* On or after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain particulate matter in excess of 0.030 kilogram/metric ton per megagram of phosphate rock feed (0.060 lb/ton).

(d) *Phosphate rock calciner.* On or after the date on which the performance test required to be conducted by §§ 63.7 and 63.605 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain particulate matter in excess of 0.0920 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)].

(e) *Evaporative cooling tower.* No owner or operator shall introduce into any evaporative cooling tower any liquids containing the effluent from any air pollution control device.

(f) *Purified phosphoric acid plant.* No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain methyl isobutyl ketone in excess of 84.320 gram/metric ton of equivalent $P_2O_5$ feed (0.16864 lb/ton). Compliance shall be determined as a monthly average based upon records of the addition of methyl isobutyl ketone to the process.

**§ 63.604 Monitoring requirements.**

(a) Each owner or operator of a new or existing wet-process phosphoric acid plant, superphosphoric acid plant, phosphate rock dryer, phosphate rock calciner, or purified phosphoric acid plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring system which can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range.

(b) Each owner or operator of a new or existing wet-process phosphoric acid plant, superphosphoric acid plant, phosphate rock calciner, or purified phosphoric acid plant subject to the provisions of this subpart shall maintain a daily record of equivalent $P_2O_5$ feed by first determining the total mass rate in metric ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flowrate which meets the requirements of paragraph (a) of this section and then by proceeding according to § 63.605(c)(3).

(c) Each owner or operator of a new or existing wet-process phosphoric acid plant, superphosphoric acid plant, phosphate rock dryer or phosphate rock calciner using a wet scrubbing emission control system shall install, calibrate, maintain, and operate the following monitoring systems:

(1) A monitoring system which continuously measures and permanently records the total pressure drop across each scrubber in the process scrubbing system. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

(2) A monitoring system which continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

(d) Any new or existing source subject to emissions limitations for total fluorides or particulate matter contained in this subpart shall comply with either paragraph (d) (1) or (2) of this section:

(1) For a new or existing affected source, following the date on which the performance test required in § 63.605 is completed, any three-hour average of the total pressure drop across the scrubber(s) or of the flow rate of the scrubbing liquid to the scrubber(s) in the process scrubbing system which exceeds ± ten percent of the value determined as a requirement of § 63.605(c)(4), (d)(4), or (e)(2) shall constitute a violation of the applicable emission limit contained in this subpart unless the affected source performs and passes a performance test as required in § 63.605 within thirty days following the exceedance. Any owner or operator who intends to conduct a performance test pursuant to this paragraph shall notify the Administrator of that intention within one business day of the parameter exceedance. Any owner or operator conducting a performance test pursuant to this paragraph (d)(1) shall establish and maintain during that test the same operating conditions as were determined during the exceedance of the operating range.

(2) The owner or operator of any new or existing affected source shall establish operating ranges for the total

pressure drop across or of the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system for the purpose of assuring compliance with applicable emission limits required in this subpart. Operating ranges may be based upon values recorded during previous performance tests using the test methods required in this subpart and established in the manner required in § 63.605 (c)(4), (d)(4), or (e)(2). As an alternative the owner or operator can base the operating ranges upon the results of performance tests conducted specifically for the purposes of this paragraph (d)(2) using the test methods required in this subpart and established in the manner required in § 63.605(c)(4), (d)(4), or (e)(2). The source shall certify that the control devices and processes have not been modified subsequent to the testing upon which the data used to establish the operating ranges were obtained. Following the approval by the permitting authority of operating ranges for the affected source, any three hour average of the values of total pressure drop or flow rate of the scrubbing liquid which exceeds the approved operating ranges shall constitute a violation of the applicable emission limit contained in this subpart.

(e) Each owner or operator of a new or existing purified phosphoric acid plant shall: (1) Install, calibrate, maintain, and operate a monitoring system which continuously measures and permanently records the stack gas exit temperature for each chiller stack. (2) Measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once daily.

(f) For any new or existing purified phosphoric acid plant, any of the following shall constitute a violation of this subpart:

(1) A thirty day average of daily concentration measurements of methyl isobutyl ketone in excess of twenty parts per million for each stripped acid stream.

(2) A thirty day average of daily concentration measurements of methyl isobutyl ketone in excess of thirty parts per million for each raffinate stream.

(3) A daily average chiller stack exit gas stream temperature in excess of fifty degrees Fahrenheit.

**§ 63.605 Performance tests and compliance provisions.**

(a) Each owner or operator of a new or existing phosphoric acid manufacturing plant shall conduct a performance test to demonstrate compliance with the applicable emission standard for each wet-process phosphoric acid plant, superphosphoric acid plant, phosphate rock dryer, and phosphate rock calciner. If the affected source has multiple control devices and/or emission points subject to the provisions of this subpart, those control devices and/or emission points shall be tested simultaneously. The owner or operator shall conduct the performance test according to the procedures in the General Provisions in subpart A of this part and in this section.

(b) In conducting performance tests, each owner or operator of an affected source shall use as reference methods and procedures the test methods in 40 CFR Part 60, Appendix A, or other methods and procedures as specified in this section, except as provided in § 63.7(f).

(c) Each owner or operator of a new or existing wet-process phosphoric acid plant or superphosphoric acid plant shall determine compliance with the applicable total fluorides standards in § 63.602 or § 63.603 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left( \sum_{i=1}^{N} C_{si} Q_{sdi} \right) / (P K)$$

Where:

E=emission rate of total fluorides, g/metric ton (lb/ton) of equivalent $P_2O_5$ feed.

$C_{si}$=concentration of total fluorides from emission point ''i,'' mg/dscm (mg/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, metric ton/hr (ton/hr).

K=conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13B (40 CFR part 60, appendix A) 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. If Method 13 B is used, the fusion of the filtered material described in Section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in section 7.3.3 and 7.3.4. in Method 13 A, may be omitted. 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, metric ton/hr (ton/hr).

$R_p$=$P_2O_5$ content, decimal fraction.

(i) The accountability system of § 63.604 (a) and (b) 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 40 CFR 60.17) shall be used to determine the $P_2O_5$ content ($R_p$) of the feed.

(4) To comply with § 63.604(d) (1) or (2), the owner or operator shall use the monitoring systems in § 63.604(c) to determine the average pressure loss of the gas stream across each scrubber in the process scrubbing system and to determine the average flow rate of the scrubber liquid to each scrubber in the process scrubbing system during each of the total fluoride runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of § 63.604(d) (1) or (2).

(d) Each owner or operator of a new or existing phosphate rock dryer shall demonstrate compliance with the particulate matter standards in § 63.602 or § 63.603 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 (40 CFR part 60, appendix A) 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 system of § 63.604(a) shall be used to determine the phosphate rock feed rate (P) for each run.

(4) To comply with § 63.604 (d)(1) or (2), the owner or operator shall use the monitoring systems in § 63.604(c) to determine the average pressure loss of the gas stream across each scrubber in the process scrubbing system and to determine the average flow rate of the scrubber liquid to each scrubber in the process scrubbing system during each of the particulate matter runs. The arithmetic average of the one-hour averages determined during the three test runs shall be used as the baseline average values for the purposes of § 63.604 (d)(1) or (2).

(e) Each owner or operator of a new or existing phosphate rock calciner shall

demonstrate compliance with the particulate matter standards in §§ 63.602 and 63.603 as follows:

(1) Method 5 (40 CFR part 60, appendix A) 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) To comply with § 63.604(d)(1) or (2), the owner or operator shall use the monitoring systems in § 63.604(c) to determine the average pressure loss of the gas stream across each scrubber in the process scrubbing system and to determine the average flow rate of the scrubber liquid to each scrubber in the process scrubbing system during each of the particulate matter runs. The arithmetic average of the one-hour averages determined during the three test runs shall be used as the baseline average values for the purposes of § 63.604 (d)(1) or (2).

(f) Each owner or operator of a new or existing purified phosphoric acid manufacturing plant shall establish and maintain an inventory system to determine the mass of methyl isobutyl ketone added to each process line at an affected source. For the purposes of determining compliance with the requirements of § 63.602(f) or § 63.603(f), the mass of methyl isobutyl ketone added to the process at any time shall be apportioned on the basis of tons of equivalent P2O5 feed, as determined under the requirements of §§ 63.604(a) and 63.604(b), for production occurring during the corresponding period of time.

**§ 63.606 Notification requirements.**

Each owner or operator subject to the requirements of this subpart shall comply with the notification requirements in § 63.9.

**§ 63.607 Recordkeeping requirements.**

Each owner or operator subject to the requirements of this subpart shall comply with the recordkeeping requirements in § 63.10.

**§ 63.608 Reporting requirements.**

(a) The owner or operator of an affected source shall comply with the reporting requirements specified in § 63.10 as follows:

(1) *Performance test report.* As required by § 63.10, the owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in § 63.9.

(2) *Excess emissions report.* As required by § 63.10, the owner or operator of an affected source shall submit an excess emissions report for any event when an operating parameter limit is exceeded. The report shall contain the information specified in § 63.10. When no exceedances of a parameter have occurred, such information shall be included in the report. The report shall be submitted semiannually and shall be delivered or postmarked by the 30th day following the end of the calendar half. If excess emissions are reported, the owner or operator shall report quarterly until a request to reduce reporting frequency is approved as described in § 63.10.

(3) *Summary report.* If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the owner or operator shall submit a summary report containing the information specified in § 63.10 rather than the full excess emissions report, unless required by the Administrator. The summary report shall be submitted semiannually and shall be delivered or postmarked by the 30th day following the end of the calendar half.

(4) If the total duration of control system parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the owner or operator shall submit a summary report and the excess emissions report.

**§ 63.609 Compliance dates.**

(a) Each owner or operator of an existing phosphoric acid manufacturing plant shall achieve compliance with the requirements of this subpart no later than (Three Years After Date of Publication of Final Rule).

(b) Each owner or operator of a phosphoric acid manufacturing plant that commences construction or reconstruction after (Date of Publication of Final Rule) shall achieve compliance with the requirements of this subpart by (Date of Publication of Final Rule) or upon startup of operations, whichever is later.

**§ 63.610 Exemption from new source performance standards.**

Any process component subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in 40 CFR Part 60.

3. Part 63 is amended by adding subpart BB consisting of §§ 63.620 through 63.630 to read as follows:

**Subpart BB—National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizers Production Plants**

Sec.

63.620 Applicability.
63.621 Definitions.
63.622 Standards for existing sources.
63.623 Standards for new sources.
63.624 Monitoring requirements.
63.625 Performance tests and procedures.
63.626 Notification requirements.
63.627 Recordkeeping requirements.
63.628 Reporting requirements.
63.629 Compliance dates.
63.630 Exemption from exemption from new source performance standards.

## Subpart BB—National Emission Standards for Hazardous Air Pollutants From Phosphate Fertilizers Production Plants

**§ 63.620 Applicability.**

(a) Except as provided in paragraph (c) of this section, the requirements of this subpart apply to the owner or operator of each new or existing phosphate fertilizers production plant.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAPs) emitted from the following affected sources at a new or existing phosphate fertilizers production plant:

(1) Each diammonium and/or monoammonium phosphate plant. The requirements of this subpart apply to the following emission points which are components of a diammonium and/or monoammonium phosphate plant: reactors, granulators, dryers, coolers, screens, and mills.

(2) Each granular triple superphosphate plant. The requirements of this subpart apply to the following emission points which are components of a granular triple superphosphate plant: mixers, curing belts (dens), reactors, granulators, dryers, coolers, screens, and mills.

(3) Each granular triple superphosphate storage building located at a granular triple superphosphate plant. The requirements of this subpart apply to the following emission points which are components of a granular triple superphosphate storage building: storage or curing buildings, conveyors, elevators, screens, and mills.

(c) The requirements of this subpart do not apply to the owner or operator of a new or existing phosphate fertilizers production plant for which the owner or operator demonstrates, to the satisfaction of the Administrator, that the facility is not a major source as defined in § 63.2.

**§ 63.621 Definitions.**

Terms used in this subpart are defined in the Clean Air Act, in § 63.2, or in this section as follows:

*Diammonium and/or monoammonium phosphate plant* means any plant manufacturing granular diammonium and/or monoammonium

phosphate by reacting phosphoric acid with ammonia.

*Equivalent $P_2O_5$ feed* means the quantity of phosphorus, expressed as phosphorous pentoxide, fed to the process.

*Equivalent $P_2O_5$ stored* means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

*Fresh granular triple superphosphate* means granular triple superphosphate produced no more than 10 days prior to the date of the performance test.

*Granular triple superphosphate plant* means any facility, not including storage buildings, manufacturing granular triple superphosphate by reacting phosphate rock with phosphoric acid.

*Granular triple superphosphate storage building* means any facility curing or storing fresh granular triple superphosphate.

*Total fluorides* means elemental fluorine and all fluoride compounds, including the HAP hydrogen fluoride, as measured by reference methods specified in 40 CFR Part 60, Appendix A, Method 13 A or B, or by equivalent or alternative methods approved by the Administrator pursuant to § 63.7(f).

**§ 63.622 Standards for existing sources.**

(a) *Diammonium and/or monoammonium phosphate plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.625 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 30 grams/metric ton of equivalent $P_2O_5$ feed (0.060 lb/ton).

(b) *Granular triple superphosphate plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.625 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 75 grams/metric ton of equivalent $P_2O_5$ feed (0.15 lb/ton).

(c) *Granular triple superphosphate storage building.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.625 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 0.250 grams/hr/metric ton of equivalent $P_2O_5$ stored ($5.0 \times 10^{-4}$ lb/hr/ton of equivalent $P_2O_5$ stored).

**§ 63.623 Standards for new sources.**

(a) *Diammonium and/or monoammonium phosphate plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.625 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 29.0 grams/metric ton of equivalent $P_2O_5$ feed (0.0580 lb/ton).

(b) *Granular triple superphosphate plant.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.625 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 61.50 grams/metric ton of equivalent $P_2O_5$ feed (0.1230 lb/ton).

(c) *Granular triple superphosphate storage building.* On and after the date on which the performance test required to be conducted by §§ 63.7 and 63.625 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected source any gases which contain total fluorides in excess of 0.250 grams/hr/metric ton of equivalent $P_2O_5$ stored ($5 \times 10^{1-4}$ lb/hr/ton of equivalent $P_2O_5$ stored).

**§ 63.624 Monitoring requirements.**

(a) Each owner or operator of a new or existing diammonium and/or monoammonium phosphate plant or granular triple superphosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring system which can be used to determine and permanently record the mass flow of phosphorus-bearing feed material to the process. The monitoring system shall have an accuracy of ±5 percent over its operating range.

(b) Each owner or operator of a new or existing diammonium and/or monoammonium phosphate plant or granular triple superphosphate plant subject to the provisions of this subpart shall maintain a daily record of equivalent $P_2O_5$ feed by first determining the total mass rate in metric ton/hour of phosphorus bearing feed using a monitoring system for measuring mass flowrate which meets the requirements of paragraph (a) of this section and then by proceeding according to § 63.625(c)(3).

(c) Each owner or operator of a new or existing diammonium and/or monoammonium phosphate plant, granular triple superphosphate plant, or granular triple superphosphate storage building using a wet scrubbing emission control system shall install, calibrate, maintain, and operate the following monitoring systems:

(1) A monitoring system which continuously measures and permanently records the total pressure drop across each scrubber in the process scrubbing system. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

(2) A monitoring system which continuously measures and permanently records the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system. The monitoring system shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range.

(d) The owner or operator of any granular triple superphosphate storage building subject to the provisions of this subpart shall maintain an accurate account of granular triple superphosphate in storage to permit the determination of the amount of equivalent $P_2O_5$ stored.

(e) Each owner or operator of a new or existing granular triple superphosphate storage building 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 § 63.625(d)(3)(C), times the total mass of granular triple superphosphate stored.

(f) Any new or existing source subject to emissions limitations for total fluorides or particulate matter contained in this subpart shall comply with either paragraph (f) (1) or (2) of this section:

(1) For a new or existing affected source, following the date on which the performance test required in § 63.625 is completed, any three-hour average of the total pressure drop across the scrubber(s) or of the flow rate of the scrubbing liquid to the scrubber(s) in the process scrubbing system which exceeds ± ten percent of the value determined as a requirement of § 63.625 (c)(4) or (d)(4) shall constitute a violation of the applicable emission limit contained in this subpart unless the affected source performs and passes a performance test as required in § 63.625 within thirty days following the exceedance. Any owner or operator who intends to conduct a performance test pursuant to this paragraph shall notify the Administrator of that intention within one business day of the parameter exceedance. Any owner or operator conducting a performance test pursuant to this paragraph shall establish and maintain during that test

the same operating conditions as were determined during the exceedance of the operating range.

(2) The owner or operator of any new or existing affected source shall establish operating ranges for the total pressure drop across or of the flow rate of the scrubbing liquid to each scrubber in the process scrubbing system for the purpose of assuring compliance with applicable emission limits required in this subpart. Operating ranges may be based upon values recorded during previous performance tests using the test methods required in this subpart and established in the manner required in § 63.625 (c)(4) or (d)(4). As an alternative the owner or operator can base the operating ranges upon the results of performance tests conducted specifically for the purposes of this paragraph using the test methods required in this subpart and established in the manner required in § 63.625 (c)(4) or (d)(4). The source shall certify that the control devices and processes have not been modified subsequent to the testing upon which the data used to establish the operating ranges were obtained. Following the approval by the permitting authority of operating ranges for the affected source, any three-hour average of the values of total pressure drop or flow rate of the scrubbing liquid which exceeds the approved operating ranges shall constitute a violation of the applicable emission limit contained in this subpart.

**§ 63.625 Performance tests and procedures.**

(a) Each owner or operator of a new or existing phosphate fertilizers production plant subject to the provisions of this subpart shall conduct a performance test to demonstrate compliance with the applicable emission standard for each diammonium and/or monoammonium phosphate plant, granular triple superphosphate plant, or granular triple superphosphate storage building. If the affected source has multiple control devices and/or emission points subject to the provisions of this subpart, those control devices and/or emission points shall be tested simultaneously. The owner or operator shall conduct the performance test according to the procedures in the General Provisions in subpart A of this part and in this section.

(b) In conducting performance tests, each owner or operator of an affected source shall use as reference methods and procedures the test methods in 40 CFR Part 60, Appendix A, or other methods and procedures as specified in this section, except as provided in § 63.7(f).

(c) Each owner or operator of a new or existing diammonium and/or monoammonium phosphate plant or granular triple superphosphate plant shall determine compliance with the applicable total fluorides standards in § 63.622 or § 63.623 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/metric ton (lb/ton) of equivalent $P_2O_5$ feed.

$C_{si}$=concentration of total fluorides from emission point ''i,'' mg/dscm (mg/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, metric ton/hr (ton/hr).

K=conversion factor, 1000 mg/g (453,600 mg/lb).

(2) Method 13A or 13B (40 CFR part 60, appendix A) 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. If Method 13B is used, the fusion of the filtered material described in section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in sections 7.3.3 and 7.3.4 in Method 13A, may be omitted. The sampling time and sample volume for each run shall be at least one hour 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, metric ton/hr (ton/hr).

$R_p$=$P_2O_5$ content, decimal fraction.

(i) The accountability system of § 63.624 (a) and (b) 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 40 CFR 60.17) shall be used to determine the $P_2O_5$ content (Rp) of the feed.

(4) To comply with § 63.624(f) (1) or (2), the owner or operator shall use the monitoring systems in § 63.624(c) to determine the average pressure loss of the gas stream across each scrubber in the process scrubbing system and to determine the average flow rate of the scrubber liquid to each scrubber in the process scrubbing system during each of the total fluoride runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of § 63.624(f) (1) or (2).

(d) Each owner or operator of a new or existing granular triple superphosphate storage building shall determine compliance with the applicable total fluorides standards in § 63.622 or § 63.623 as follows:

(1) The owner or operator shall conduct performance tests only when the following quantities of product are being cured or stored in the facility.

(i) Total granular triple superphosphate is at least 10 percent of the building capacity, and

(ii) Fresh granular triple superphosphate is at least 20 percent of the total amount of triple superphosphate, or

(iii) If the provision in paragraph (d)(1)(ii) of this section exceeds production capabilities for fresh granular triple superphosphate, fresh granular triple superphosphate is equal to at least 5 days maximum production.

(2) In conducting the performance test, the owner or operator shall use as reference methods and procedures the test methods in Part 60, Appendix A, or other methods and procedures as specified in this section, except as provided in § 63.7(f).

(3) The owner or operator shall determine compliance with the total fluorides standard in §§ 63.622 and 63.623 as follows:

(i) 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/metric ton (lb/hr/ton) of equivalent $P_2O_5$ stored.

$C_{si}$=concentration of total fluorides from emission point ''i,'' mg/dscm (mg/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 (453,600 mg/lb).

(ii) Method 13A or 13B (40 CFR part 60, appendix A) 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. If Method 13 B is used, the fusion of the filtered material described in section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in Sections 7.3.3 and 7.3.4 in Method 13 A,

may be omitted. The sampling time and sample volume for each run shall be at least one hour and 0.85 dscm (30 dscf).

(iii) 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, metric ton (ton).

$R_p$=$P_2O_5$ content of product in storage, weight fraction.

(A) The accountability system of § 63.624 (d) and (e) shall be used to determine the amount of product ($M_p$) in storage.

(B) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see 40 CFR 60.17) shall be used to determine the $P_2O_5$ content ($R_p$) of the product in storage.

(4) To comply with § 63.624(f) (1) or (2), the owner or operator shall use the monitoring systems in § 63.624(c) to determine the average pressure loss of the gas stream across each scrubber in the process scrubbing system and to determine the average flow rate of the scrubber liquid to each scrubber in the process scrubbing system during each of the total fluoride runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of § 63.624(f) (1) or (2).

**§ 63.626 Notification requirements.**

Each owner or operator subject to the requirements of this subpart shall comply with the notification requirements in § 63.9.

**§ 63.627 Recordkeeping requirements.**

Each owner or operator subject to the requirements of this subpart shall comply with the recordkeeping requirements in § 63.10.

**§ 63.628 Reporting requirements.**

(a) The owner or operator of an affected source shall comply with the reporting requirements specified in § 63.10 as follows:

(1) *Performance test report.* As required by § 63.10, the owner or operator shall report the results of the initial performance test as part of the notification of compliance status required in § 63.9.

(2) *Excess emissions report.* As required by § 63.10, the owner or operator of an affected source shall submit an excess emissions report for any event when an operating parameter limit is exceeded. The report shall contain the information specified in § 63.10. When no exceedances of a parameter have occurred, such information shall be included in the report. The report shall be submitted semiannually and shall be delivered or postmarked by the 30th day following the end of the calendar half. If excess emissions are reported, the owner or operator shall report quarterly until a request to reduce reporting frequency is approved as described in § 63.10.

(3) *Summary report.* If the total duration of control system exceedances for the reporting period is less than 1 percent of the total operating time for the reporting period, the owner or operator shall submit a summary report containing the information specified in § 63.10 rather than the full excess emissions report, unless required by the Administrator. The summary report shall be submitted semiannually and shall be delivered or postmarked by the 30th day following the end of the calendar half.

(4) If the total duration of control system parameter exceedances for the reporting period is 1 percent or greater of the total operating time for the reporting period, the owner or operator shall submit a summary report and the excess emissions report.

(b) [Reserved]

**§ 63.629 Compliance dates.**

(a) Each owner or operator of an existing phosphate fertilizers production plant shall achieve compliance with the requirements of this subpart no later than (Three Years After Date of Publication of Final Rule).

(b) Each owner or operator of a phosphate fertilizers production plant that commences construction or reconstruction after (Date of Publication of Final Rule), shall achieve compliance with the requirements of this subpart by (Date of Publication of Final Rule) or upon startup of operations, whichever is later.

**§ 63.630 Exemption from new source performance standards.**

Any process component subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in 40 CFR Part 60.

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