

# **Federal Register**

Thursday  
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## **Part V**

# **Environmental Protection Agency**

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**40 CFR Part 60**

**Standards of Performance for New  
Stationary Sources; Nonmetallic Mineral  
Processing Plants; Final Rule**

**ENVIRONMENTAL PROTECTION AGENCY**

40 CFR Part 60

(AD-FRL-2820-4)

**Standards of Performance for New Stationary Sources; Nonmetallic Mineral Processing Plants****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

**SUMMARY:** Standards of performance for nonmetallic mineral processing plants were proposed in the *Federal Register* on August 31, 1983 (48 FR 39566). This action promulgates standards of performance for nonmetallic mineral processing plants. These standards implement section 111 of the Clean Air Act and are based on the Administrator's determination that nonmetallic mineral processing plants cause, or contribute significantly to air pollution which may reasonably be anticipated to endanger public health or welfare. The intended effect of these standards is to require all new, modified, and reconstructed nonmetallic mineral processing plants to achieve emission levels that reflect the best demonstrated system of continuous emission reduction, considering costs, nonair quality health, and environmental and energy impacts.

**EFFECTIVE DATE:** August 1, 1985. Under section 307(b)(1) of the Clean Air Act, judicial review of this new source performance standard (NSPS) is available *only* by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Clean Air Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

**ADDRESSES:** *Background Information Document.* The background information document (BID) for the promulgated standards may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Please refer to "Nonmetallic Mineral Processing Plants—Background Information for Promulgated Standards" (EPA-450/3-83-001b). The BID contains: (1) A summary of all the public comments made on the proposed standards and the Administrator's response to the comments; (2) a summary of the changes made to the standards since proposal; and (3) the

final Environmental Impact Statement which summarizes the impacts of the standards.

**Docket.** Docket number OAQPS-78-11, containing information considered by EPA in development of the promulgated standards, is available for public inspection between 8:00 a.m. and 4:00 p.m., Monday through Friday, at the EPA's Central Docket Section (LE-131), West Tower Lobby, Gallery 1, 401 M Street SW., Washington, D.C. 20460. A reasonable fee may be charged for copying.

**FOR FURTHER INFORMATION CONTACT:** Mr. Doug Bell or Mr. William Harnett, (919) 541-5578, concerning regulatory decisions, and Mr. Kenneth R. Durkee or Mr. James A. Eddinger, (919) 541-5596, concerning technical aspects of the industry and control technologies. The address for the above parties is: Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

**SUPPLEMENTARY INFORMATION:****The Standards**

Standards of performance for new sources established under Section 111 of the Clean Air Act reflect:

... application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated (Section 111(a)(1)).

For convenience, this will be referred to as "best demonstrated technology" or "BDT."

The promulgated standards apply to new, modified, and reconstructed facilities at plants that process any of the following 18 nonmetallic minerals: crushed and broken stone, sand and gravel, clay, rock salt, gypsum, sodium compounds, pumice, gilsonite, talc and pyrophyllite, boron, barite, fluor spar, feldspar, diatomite, perlite, vermiculite, mica, and kyanite. The affected facilities are each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, and enclosed truck or railcar loading station. Common clay plants and pumice plants with capacities of 9 megagrams per hour (Mg/h) [10 tons per hour (tons/h)] or less, fixed sand and gravel plants and crushed stone plants with capacities of 23 Mg/h (25 tons/h) or less, and portable sand and gravel plants and crushed stone plants with capacities of 136 Mg/h (150 tons/h) or less are exempt from the standards. All nonmetallic mineral

processing equipment at lime plants, power plants, steel mills, and other source categories not already covered by standards of performance for those categories is covered by the standards. Equipment used to process nonmetallic minerals at asphalt concrete plants and Portland cement plants will be covered by these standards unless such equipment is already covered by other standards of performance or follows equipment subject to other standards of performance.

It is believed that the addition of new process lines at new or existing plants is the most likely way facilities would become affected by the standards. The EPA's information shows that replacement or modification of individual pieces of equipment at existing plants is not a common practice, and EPA believes that replacement will remain uncommon. Therefore, EPA did not calculate the impacts of controlling replacement of existing pieces of equipment with new equipment. While EPA believes replacement of an individual affected facility in an existing process line is unlikely, EPA recognizes that if such replacements do occur, the costs of retrofitting controls could be large. Therefore, EPA has provided an exemption for certain replacements which is consistent with the environmental and economic analyses performed. Under the final standards the replacement of an existing facility with a new facility of equal or smaller size and having the same function is exempt from compliance with the emissions limits of these standards. The replacement exemption will not apply in the case that all affected facilities in a production line are replaced with new facilities. In such a case, all new affected facilities will be subject to the stack and fugitive emissions limits contained in the regulation. The EPA's analyses show that control of an entire production line is feasible. In order to qualify for the exemption, an owner or operator replacing an existing facility with a new facility of equal or smaller size must report this to EPA and to the State, if the State has been granted NSPS authority. The type and size of the existing and new facilities, a description of the control system for the existing facility and the age of the existing facility must also be reported to the EPA Office of Air Quality Planning and Standards. This information will be used during the 4-year review of the standards to assess the frequency and characteristics of such replacements and the need for continuation of the exemption.

The standards are based on emission levels achievable using well designed and operated baghouse control or wet dust suppression techniques. Both systems are BDT. The promulgated standards limit both fugitive and stack emissions of particulate matter from affected facilities. Fugitive emissions are emissions not collected by a capture system. Fugitive emission are limited to 10 percent opacity for all affected facilities with the following exception: fugitive emissions from crushers at which capture systems are not used are limited to 15 percent opacity. The standards for stack emissions, which are emissions collected by a capture system, limit the concentration of particulate matter to 0.05 gram per dry standard cubic meter (g/dscm) [0.02 grain per dry standard cubic foot (gr/dscf)] and 7 percent opacity.

The stack opacity standard does not apply to affected facilities that use wet scrubbers to control emissions. Instead, an owner or operator of an affected facility using a wet scrubber for controlling emissions is required to install a monitoring device to continuously measure the liquid flow rate to the scrubber and a device to measure the pressure drop across the scrubber. An operator of a wet scrubber is also required to record the pressure drop and flow rate daily and to report semiannually the occasions when the measurements of these parameters differ by more than  $\pm 30$  percent from those measurements recorded during the last performance test.

If affected facilities are enclosed in a building for the purpose of controlling emissions, there must be no visible fugitive emissions from the building and emissions from building vents must meet the stack emissions standards of 0.05 g/dscm and 7 percent opacity; or individual affected facilities inside the building must meet the emission limits required for each affected facility (i.e., fugitive opacity of 15 percent for crushers at which capture systems are not used and 10 percent for all other affected facilities). "Vents" are defined as openings through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions, from one or more affected facilities.

Reference Methods 1, 2, 3, and 5 or 17 will be used to determine compliance with the stack concentration standard. Reference Method 9 will be used to measure the opacity of stack emissions, the opacity of process fugitive emissions, and the opacity of emissions from building vents. Reference Method

22 will be used to measure the visible fugitive emissions from buildings enclosing affected facilities.

#### Summary of Environmental, Energy, and Economic Impacts

##### *Environmental Impact*

Emissions reductions were estimated by comparing emissions from affected facilities at new and expanded plants under the proposed standards versus emissions which would be allowed by typical State process weight regulations. The method of calculating emissions reductions is described in the BID for the proposed standards.

By the fifth year following proposal, the promulgated standards are estimated to reduce the total amount of particulate matter emissions into the atmosphere by 41,000 megagrams per year (Mg/yr) [45,000 tons per year (tons/yr)]. This reduction is 90 percent greater than that achievable with a typical State process weight regulation.

With the use of dry collection techniques (baghouses) to achieve the standards, no water discharge is generated. Therefore, there would be no adverse water pollution impact from the standards. Where wet dust suppression is used to meet the standards, there would be no significant water discharge because most of the water adheres to the material being processed until it evaporates.

The solid waste impact of the standards would be very small. When dry collection techniques are used, about 1.4 Mg (1.5 tons) of solid waste are collected for every 250 Mg (276 tons) of material processed. In many cases, this material can be recycled back into the process, sold, or used for a variety of purposes. Where no market exists for the collected material, it is typically disposed of in a mine or in an isolated location in a quarry. No Subsequent air pollution problems should develop, provided the waste pile is protected from wind erosion. Information on control techniques for waste piles is included in the document entitled "Air Pollution Control Techniques for Nonmetallic Minerals Industry" (EPA 450/3-82-014) available from the EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Where wet dust suppression is used to meet the standards, no solid waste disposal problem would result from implementing the standards.

##### *Energy Impact*

The incremental energy requirements of the standards have been estimated by comparing the energy required for the

use of baghouses to control particulate matter emissions to the energy required for no control system. The estimates indicate a greater impact than would actually occur because it is expected that less energy-consuming wet dust suppression systems would be used in many cases to achieve the standards. In addition, many new plants would use baghouses or combinations of baghouses and water spray controls to meet existing State regulations, and the full cost of control would not be attributable to the NSPS.

The energy required to control all new nonmetallic mineral processing plants constructed by the fifth year after proposal to the level of the promulgated standards would be about 430 terajoules per year (1.2 terajoules per day), indicating a minor impact on national electrical energy demand. This would be about a 15 percent increase over the amount of energy that would otherwise be required to meet the industry's projected capacity additions without controls. The increased energy consumption for typical plants that would result from the promulgated standards would range from about 5 percent for a 136 Mg/h (150 tons/h) plant having both crushing and grinding operations to about 20 percent for a 9 Mg/h (10 tons/h) plant having only a crushing operation.

##### *Economic Impact*

The costs and economic impacts associated with the promulgated standards are considered to be reasonable. The estimated impacts are based on a comparison of baghouse use to a no-control case. Less expensive wet dust suppression systems may be used in many cases to achieve the standards. Also, many new plants would use baghouses or a combination of baghouses and water sprays to meet existing State regulations. Thus, the actual economic impact of the standards would be expected to be considerably less than the estimates summarized below.

The impact of the standards on an individual plant was evaluated by developing a discounted cash flow (DCF) analysis for each new model plant size. DCF is an investment decision analysis that shows the economic feasibility of a planned capital investment project over the life of the project. The results of the analysis indicate that the costs associated with implementing the promulgated standards would not preclude construction of most new nonmetallic mineral processing plants that would be built in the absence of the standards.

However, the DCF analysis indicated that the incremental costs associated with baghouse control may preclude the construction of new pumice plants and common clay plants with capacities of 9 Mg/h (10 tons/h) or less, fixed sand and gravel plants and crushed stone plants with capacities of 23 Mg/h (25 tons/h) or less, and portable sand and gravel plants and crushed stone plants with capacities of 136 Mg/h (150 tons/h) or less. For this reason, these plants are exempt from the standards. Representatives of the crushed stone and sand and gravel industries have indicated that few, if any, fixed plants smaller than 23 Mg/h (25 tons/h) and portable plants smaller than 136 Mg/h (150 tons/h) would be built in the future. Nevertheless, these exemptions are provided for those few plants that may be built.

All of the dollar figures presented below are in 1979 dollars. Figures that were reported in 1976 dollars in the economic impact analysis in the BID for the proposed standards have been converted to 1979 dollars for comparison purposes. The capital costs for baghouse control systems for plants having only a crushing operation would range from \$70,000 for a 9 Mg/h (10 tons/h) plant to \$396,000 for a 544 Mg/h (600 tons/h) plant or from 12 to 9 percent of the plant's total capital costs. Total annualized costs would range from \$17,000 to \$105,000 per year. For plants having both crushing and grinding operations, capital costs would range from \$109,000 for a 9 Mg/h (10 tons/h) plant to \$219,000 for a 136 Mg/h (150 tons/h) plant or from 16 to 6 percent, respectively, of the plant's total capital costs. For these plants, annualized costs would range from \$25,000 to \$53,000 per year. For portable crushing plants, capital costs would range from \$88,000 for a 68 Mg/h (75 tons/h) plant to \$260,000 for an 816 Mg/h (900 tons/h) plant or from 22 to 15 percent, respectively, of the plant's total capital costs. Annualized costs would range from \$34,000 to \$105,000 per year. The total additional capital cost to install baghouses on all new plants would be about \$125 million for the first 5 years the standards are in effect. The nationwide annualized cost of control at plants covered by the standards would increase by \$34 million in the fifth year following proposal of the standards. For each mineral industry, the annualized control cost in the fifth year divided by the annual output is less than 2 percent of the price of a ton of product.

The environmental, energy, and economic impacts are discussed in greater detail in the two BID's for the

standards: (1) "Nonmetallic Mineral Processing Plants—Background Information for Proposed Standards" (EPA-450/3-83-001a), and (2) "Nonmetallic Mineral Processing Plants—Background Information for Promulgated Standards" (EPA-450/3-83-001b).

#### Public Participation

Prior to proposal of the standards, interested parties were advised by public notice in the *Federal Register* (40 FR 34454, August 11, 1975; and 43 FR 26797, June 22, 1978) of meetings of the National Air Pollution Control Techniques Advisory Committee to discuss the standards for nonmetallic mineral processing plants recommended for proposal. These meetings were held on September 3-4, 1975 and July 11-12, 1978. The meetings were open to the public and each attendee was given an opportunity to comment on the standards recommended for proposal. The proposed standards were published in the *Federal Register* on August 31, 1983 (48 FR 39566). The preamble to the proposed standards discussed the availability of the BID, "Nonmetallic Mineral Processing Plants—Background Information for Proposed Standards" (EPA-450/3-83-001a), which described in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal and, when requested, copies of the BID were distributed to interested parties. It was stated in the *Federal Register* that a public hearing would be held, if requested, to provide interested persons the opportunity for oral presentation of data, views, or arguments concerning the proposed standards. A public hearing was not requested or held. The public comment period was from August 31 to November 14, 1983. Fifty-two comment letters were received concerning issues relative to the proposed standards of performance for nonmetallic mineral processing plants. The comments have been carefully considered and, where determined to be appropriate by the administrator, changes have been made in the proposed standard.

#### Significant Comments and Changes to the Proposed Standards

Comments on the proposed standards were received from industry, trade associations, State and local air pollution control agencies, and Senators and Members of Congress. A detailed discussion of these comments and responses can be found in the BID, which is referred to in the **ADDRESSES** section of this preamble. The summary

of comments and responses in the BID serve as the basis for the revisions which have been made to the standards between proposal and promulgation. The major comments and responses are summarized in this preamble. Most of the comment letters contained multiple comments. The comments have been divided into the following areas: Need for Regulation of Source Category, Selection of Industries Included in Source Category, Definition of Affected Facility, Control Technology, Economic Impact, Selection of Emission Limits, Test Methods and Monitoring, and Miscellaneous.

#### Need for Regulation of Source Category

Several commenters questioned the EPA's determination that nonmetallic mineral processing plants are sources of emissions that cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health or welfare. Many of these commenters stated that nonmetallic mineral processing plants are insignificant sources of fugitive particulate emissions when compared to other sources of these emissions. Some commenters also stated that they are not aware of any documented cases of anyone being harmed by the dust from the crushing and processing of limestone. Several commenters felt this industry is not a significant source of emissions into the ambient air because the emissions do not leave the plant boundaries. Commenters also questioned the EPA's estimate that the standards could reduce total particulate emissions by 41,000 megagrams/yr (45,000 tons/yr). They believed this estimate was too high. For these reasons, the commenters believed standards of performance should not be promulgated for nonmetallic mineral processing plants.

The EPA has determined that nonmetallic mineral processing plants as a category contribute significantly to particulate matter air pollution, and that such pollution may reasonably be anticipated to endanger public health and welfare. The EPA has also determined that a reduction in particulate emissions can be achieved by application of best demonstrated technology. Under Section 111 of the Clean Air Act, EPA is, therefore, required to promulgate standards of performance for this source category.

Nonmetallic mineral processing plants were ranked 13th out of 59 major source categories on the EPA's priority list of source categories (44 FR 49225, August 21, 1979). This list was promulgated under section 111(f) of the Clean Air

Act. Source categories were included on the list if, in the Administrator's judgment, they cause, or significantly contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. Source categories were ranked in order of priority according to (1) quantity of emissions, (2) potential impact on health and welfare, and (3) mobility and competitive nature of the source category.

Nonmetallic mineral industries were included on the NSPS priority list due to potentially significant emissions of particulate matter. Particulate matter is a criteria pollutant which has been determined to be an air pollutant which may endanger public health and welfare and for which a national ambient air quality standard (NAAQS) has been promulgated. (Limestone dust and other dusts emitted by the nonmetallic mineral industry are types of particulate matter.) The Administrator's determination that particulate emissions may endanger public health and welfare is documented in "Air Quality Criteria for Particulate Matter and Sulfur Oxides" (EPA-600/8-82-029a).

The EPA examined control technologies and identified BDT for certain facilities at nonmetallic mineral processing plants. Economic analyses have shown that the costs and economic impacts of applying BDT in accordance with the proposed and promulgated standards are reasonable. The magnitude of emissions reductions which would result from the standards was estimated in the background document for the proposed standards.

This estimate was made by EPA using the best available data and reasonable assumptions. Baseline emissions (those which would occur in the absence of an NSPS) were estimated by assuming that new and expanded plants would comply with typical State process weight regulations. These were compared with emissions estimated to occur if new and expanded plants were controlled to the level required by the proposed NSPS. By this method of estimation, the emissions reduction achievable under the proposed NSPS was found to be 41,000 Mg/yr (45,000 tons/yr). This is a reduction of 90 percent over baseline emissions. The EPA recognizes that there are uncertainties in this emissions reduction estimate. Variability in current control levels and variability in processes and emissions occurring at individual plants within each industry and among the 18 nonmetallic mineral industries lead to uncertainty in emissions estimates. Furthermore, economic predictions of the growth of

the industries are always uncertain. However, the estimates are based on reasonable assumptions and are adequate for decision-making purposes.

#### *Selection of Industries Included in Source Category*

Several commenters expressed concern over the following statement in the preamble to the proposed standards: "The 18 minerals covered by the proposed standards were selected on the basis of production tonnage rather than on the basis of any health or welfare considerations as compared to the other minerals." They believed this selection methodology violates the intent and scope of the Clean Air Act. Some believed that the goal of the Clean Air Act is improved air quality through reduction of total suspended particulates but that the EPA's approach leads to control of relatively small point sources of particulate emissions while missing major area sources. Others said that EPA must base regulation of specific industries on health and welfare considerations rather than on size.

The statement the commenters quoted concerning the selection of industries to be covered was an explanation of how EPA selected the particular 18 minerals to be covered by the NSPS from all the nonmetallic minerals that exist. The statement was not intended to provide any rationale for developing an NSPS for nonmetallic mineral processing plants. The reasons for developing an NSPS for the nonmetallic mineral source category were discussed in the previous response.

For the purposes of standards development, EPA had to define which industries within the nonmetallic mineral industry source category would be regulated. Since similar grinding and crushing processes occur at most nonmetallic mineral industries, it is assumed that potential particulate emissions will be roughly proportional to production tonnage. Therefore, the largest sources of emissions will be controlled by regulating the industries which produce the largest volumes of nonmetallic minerals. Since the largest emissions reductions can be achieved by regulating the largest nonmetallic mineral industries, the 18 largest have been selected for inclusion in the NSPS. These 18 categories are based upon Bureau of Mines classifications and are the largest mined production segments of the nonmetallic mineral industry which have crushing and grinding operations, excluding coal, phosphate rock and asbestos. Crushing and grinding of coal and phosphate rock are covered under NSPS for coal preparation plants and phosphate rock

plants. Processing of asbestos is regulated under the national emission standard for hazardous air pollutants (NESHAP) developed for asbestos.

#### *Selection of Affected Facility*

Fourteen commenters objected to the designation of each piece of equipment at a processing plant as an affected facility. They believed that the entire plant should be designated as the affected facility. The commenters stated that control systems are designed for the entire processing plant, not for each piece of equipment. Therefore, retrofitting individual pieces of equipment at existing plants could entail either replacing existing multiple facility control technology completely or installing a separate control device for each piece of equipment as it is replaced. The commenters reasoned that the former would mean the entire plant, including existing facilities, would be meeting the standards and the latter would lead to an inefficient control technology design with each piece having its own control device. The commenters believed that it was not the EPA's intent to have either situation occur. The commenters also stated that nonmetallic mineral processing plants are not similar to other manufacturing operations regulated under section 111 because they are designed as an integrated unit. They pointed out that a broken crusher, screen, or conveyor belt can render an entire production plant inoperative. They recommended that the entire plant be designated as the affected facility. One commenter felt that since crushers, grinding mills, screening operations, bucket elevators, belt conveyors, and storage bins are part of an integral unit, they should be considered one affected facility. He felt that since bagging operations and truck and railcar loading stations can operate independently of the rest of the plant, they could be considered separate affected facilities. Five commenters believed that Congress intended to protect and enhance air quality by controlling new plants as they are built and old plants when they are substantially rebuilt. They felt that designating the entire plant as the affected facility is more consistent with this intent. The commenters felt that specific pieces of equipment within a plant that are replaced without causing any increase in emissions should not be subject to the NSPS if such replacements fall under the 50 percent fixed capital cost threshold as outlined in the reconstruction provisions.

One commenter suggested another alternative of having EPA provide a

waiver for plants that can show technical and cost reasons for designating the entire plant as the affected facility.

One commenter asked that replacement of a worn-out piece of equipment with a new piece of equipment of the same type and with the same capacity be exempt from coverage. The commenter called this type of replacement common. Another commenter requested clarification of whether total replacement of an individual piece of equipment is exempt from the NSPS. Another commenter stated that these replacements were made on a regular and relatively routine basis.

It is the EPA's interpretation that these comments fall essentially into two subject areas: (1) Should the affected facility be defined more broadly than proposed (i.e., the whole plant instead of each piece of equipment)? (2) Is it reasonable to subject owners or operators to the standards if they are replacing an existing piece of equipment with another piece of equipment of equal or smaller size? In summary, EPA has concluded that the narrow definition should be retained. However, the Agency agrees that the replacement of an existing piece of equipment with another piece of equipment of equal or smaller size should be excluded from coverage in this case due to special characteristics of this source category. The rationale for these conclusions is discussed in the remaining paragraphs of this response.

*Broad Versus Narrow Definition Of Affected Facility.* In accordance with its congressional mandate to set performance standards based on best systems of continuous emission reduction considering cost, EPA reviewed all operations associated with the mining and processing of nonmetallic minerals for possible coverage by the NSPS. Those facilities now listed as affected and covered by the NSPS represent those for which EPA had adequately demonstrated control techniques which can be applied at reasonable cost.

As discussed in the proposal preamble, the choice of the affected facility is based on the Agency's interpretation of Section 111 of the Act and judicial construction of its meaning. [The most important case is *ASARCO, Inc. v. EPA*, 578 F.2d 319 (D.C. Cir. 1978).] Under section 111, the NSPS must apply to "new sources;" "source" is defined as any building, structure, facility, or installation which emits or may emit any air pollutant" (Section 111(a)(3)). Most industrial plants, however, consist of numerous pieces or

groups of equipment that emit air pollutants and that might be viewed as "sources." The EPA, therefore, uses the term "affected facility" to designate the equipment, within a particular kind of plant, which is chosen as the "source" covered by a given standard.

Since the purpose of section 111 is to minimize emissions by application of BDT (considering cost, health and environmental effects, and energy requirements) at all new, modified, and reconstructed sources, there is a presumption that a narrower designation of the affected facility is proper. In order to promulgate the broader designation, EPA would have to find that it would achieve greater total emission reductions or equivalent total reductions with significant other benefits such as reduced costs, energy consumption or other environmental impacts. In determining the appropriate designation of affected facilities for this NSPS, EPA considered the cost, environmental, energy, and economic impacts associated with the narrow designation as it was proposed (i.e., each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station) and determined them to be reasonable. For all new processing plants expected to be constructed in the first 5 years after proposal of the NSPS, cost and economic impact analyses were prepared which analyzed the NSPS impacts on the economic feasibility of new plants. Where the analysis showed that the cost of control equipment had unreasonable impacts on the economic feasibility of a particular size of new plant, an exemption from compliance with this NSPS was given (e.g., 25 ton per hour stationary crushed stone plants, see § 60.670).

For existing facilities within the nonmetallic mineral industry, the EPA's information about the industry indicated that there would be few modifications and reconstructions. Modifications were not expected to occur because of the industry's operating characteristics. For example, changes to the equipment are not typically made for processing different types of raw materials because the equipment is designed to process different materials and changing raw materials would, therefore, not constitute a modification [40 CFR 60.14(e)(4)]. In fact, the only plausible case the Agency found in which emissions would be increased from an existing facility was the case of increasing operating hours, a case which is specifically exempt from coverage through modification provisions [40 CFR 60.14(e)(3)]

Similarly, reconstruction in its usual sense was not expected to occur frequently. While parts of affected facilities (narrow definition) are replaced, these replacements are regular, routine maintenance activities, such as replacement of ore contact surfaces and other nondepreciable items. These routine replacements are performed to keep existing equipment operational. Because of these maintenance activities, the equipment has a long operational life and neither reconstructions nor replacements are expected to be frequent. Based on information available to the Agency, the EPA's judgment is that total replacements, if they occurred, would most likely consist of replacing existing equipment with larger capacity equipment for purposes of increasing production capacity or changing product specifications.

After considering processes using existing equipment and additions and changes which might be made to them, EPA concluded that the most likely change to occur would be the addition of completely new production lines of equipment with equipment designed for increase production or changes in product specifications. Based on the cost and economic impact analyses prepared, EPA concluded that it was economically reasonable to control new production lines.

Expansions of plant capacity typically occur with the addition of a new crushing or grinding line, which may include one or more of each of the facilities listed above. With the entire plant designated as the affected facility (broader designation), the addition of a new crushing or grinding line would cause the entire plant to be covered by the standards. This could cause significant cost, economic and energy impacts because of retrofitting control equipment on the existing pieces of equipment. Under the narrow designation of affected facility, the standards would cover only the new equipment used to expand the plant. Because the economic impact analysis showed it was reasonable to control the new equipment and because of the potential for unreasonable impacts associated with the broader designation, it was concluded that the narrow designation of affected facility was appropriate and reasonable.

Replacement Of Equipment With Similar Equipment Of Equal Or Smaller Size—Contrary to the information developed by EPA, representatives of several major trade groups have commented that replacements of equipment with new equipment of the

same size do occur. In fact, one association said that replacements, including replacements of existing pieces of equipment with similar pieces of equipment of equal size occur on a regular and relatively routine basis.

The EPA requested specific data on the frequency of replacement of equipment with equipment of the same or smaller size from these industry representatives but received nothing more definitive. However, the nature of this industry may make this type of information difficult to obtain. There are over 10,000 existing sand and gravel and crushed stone plants in the U.S. Because there are so many producers, so widely dispersed, it is difficult for either the industry or EPA to gather comprehensive information needed to fully quantify the equipment replacement practices at all of these plants. However, EPA agrees that the replacement practices cited by the industry are certainly possible. The EPA's analyses show that control of an entire new production line is reasonable, but to the extent that replacement of individual facilities within a production line does occur where controls are in place, separate control of each individual piece of equipment may impose unreasonable costs.

Therefore, to resolve this issue, EPA has included an exemption from compliance with the particulate emission limits of the standards for replacement of existing equipment with similar equipment of equal or smaller size. However, if every facility in a production line is replaced with a new facility, all new facilities will have to comply with the stack and fugitive emission limits contained in § 60.672 of the regulation. If all facilities in a production line are replaced over a period of time, every facility will become subject to the emission limits at the time the last of the existing facilities in the line is replaced with a new facility. The facilities in the production line would become affected regardless of the length of time over which replacement occurred. A production line is defined as all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) that are connected together either directly or by a conveying system.

Although industry commenters have said that replacement of individual facilities is common, EPA has no data that would indicate that it is a widespread practice. Moreover, the

EPA's growth and environmental impact projections were not based on such replacements. Therefore, EPA expects no significant impact on emission reductions which could be achieved under the standards. The EPA will, however, reassess this exemption in 4 years during the review of the standards.

Recordkeeping provisions have been added to the final standards to allow the Agency to obtain statistics on the number and type of such replacements which occur. Compliance with § 60.676 of the standards requires an owner or operator replacing an existing facility with a new facility of equal or smaller size to report the following information to the Regional EPA Office or to the State if they have been delegated NSPS authority and also to the EPA Office of Air Quality Planning and Standards: (1) The type and sizes of the existing and new facilities, (2) a description of the emissions control system on the existing facility, and (3) the age of the existing facility. The EPA is authorized to collect information such as this for the purposes of standards development under Section 114 of the Clean Air Act. During the 4-year review, EPA will use the collected information to reconsider the need for this exemption and, if appropriate, analyze the impacts of requiring such replacements to comply with the emission limits.

#### *Control Technology*

Some commenters perceived that the proposed standards did not allow for the enclosure of affected facilities in buildings. One said that processing equipment at brick plants is normally enclosed in buildings. Under the proposed standards, they said, emissions measurements would have to be taken at each piece of equipment inside a building, and facilities could be found in violation even if emissions did not escape the building. They concluded that in this situation, EPA would be regulating workplace rather than ambient air emissions. They requested that emissions measurements be taken outside such buildings to determine compliance.

The EPA met with the commenter in order to better understand this comment. The commenter brought photographs of one brick plant in which the crushing and grinding equipment appeared to be controlled very effectively with fabric filters. Both the process equipment and the control systems were located inside of buildings. Exhaust ducts from the control equipment exited through the buildings. However, fugitive emissions were not in evidence in the photographs

taken inside the buildings, nor were they seen exiting from the buildings. The EPA also visited three brick plants operated by two companies. The trip reports are in the docket. In general, emissions from crushing and grinding operations are well controlled. Although the sides of buildings housing these operations were open and conditions during the visits were windy, no visible emissions were observed exiting from the buildings at two of the three plants. At the third plant, visible emissions from a hammermill were observed escaping from one side of a building.

The EPA agrees with the commenter that the intent of section 111 is to limit emissions to the ambient air. The EPA also agrees that in some cases enclosure of affected facilities in buildings is equivalent to BDT. For these reasons, EPA has expanded §§ 60.672 and 60.675 of the promulgated standards to add emissions limits and methods of determining compliance which apply if affected facilities are enclosed by a building. Under the final standards, affected facilities inside an unvented building will be determined to be in compliance if there are no visible fugitive emissions from the building as determined by EPA Method 22. If the building is vented and there are no visible fugitive emissions, and the emissions from the vent meet the stack particulate standards of 0.05 g/dscm and 7 percent opacity, the affected facilities inside the building will be determined to be in compliance. A vent is defined as an opening through which there is mechanically induced airflow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities. If there are no fugitive emissions from the building and any vent from the building meets the emission limits, then the emissions control is equivalent to that achieved using BDT.

However, if emissions from the building exceed the "no visible emissions" fugitive standard or the stack standards, opacity must be measured at each affected facility inside the building, and the applicable standards (i.e., 15 percent fugitive opacity for crushers without capture systems and 10 percent opacity for all other facilities) must be met by each affected facility. These provisions allow buildings to be used as control devices and compliance measurements to be taken outside the building if the building can meet a "no visible emissions" fugitive standard and the applicable stack emissions standards.

When measuring compliance with the standards, Method 22 shall be used to

measure visible emissions from buildings. The minimum total observation period for each building shall be 75 minutes, and each side of the building and the roof shall be observed for at least 15 minutes. If any visible fugitive emissions are seen leaving the building, regardless of whether these emissions are generated by an affected facility, opacity measurements will be conducted at each affected facility inside the building using Method 9. In this case, each affected facility must meet the applicable fugitive opacity limits in order to be determined to be in compliance.

#### *Economic Impact*

Several commenters questioned the EPA's conclusion that requiring baghouse control on portable plants is reasonable. They stated that each time a facility was relocated, the operator would have to modify the control system. They did not believe the costs associated with this activity were included in the cost estimates. Some commenters also questioned why EPA exempted portable plants of 150 tons/h or less from the regulation. They believed portable plants of up to 300 tons/h should have been exempted.

The EPA's analyses show that it is reasonable for portable plants with capacities of over 150 tons/h to be covered by the standards. The EPA modeled portable plants with two different plant configurations and two control options to account for variability in portable plants. The two types of configurations are straight-line and L-shaped. Control Option 1 assumed one baghouse is used to control the entire portable plant if the plant's capacity is 270 Mg/h (300 tons/h) or less. For larger plants, it was assumed that the primary crusher would be ducted to one baghouse and all other pieces of equipment would be ducted to a second baghouse. Option 2 assumed the following sources are controlled by individual baghouses: primary crusher, secondary crusher and associated screen, tertiary crusher and associated screen, and final screen. For both options, emissions from conveyor transfer points are assumed to be hooded and ducted to the baghouse system.

Plants were assumed to move an average of 4 moves per year between quarries or 24 moves per year within a quarry. This is believed to be an unusually large or worst case estimate of the number of moves typically made by portable plants and would lead to overestimation of control costs in most cases. It is believed the plant would usually be set up in a similar

configuration in order to minimize moving and set-up costs and to avoid modification of process equipment. The costs of dismantling, moving, and reassembling the control system were estimated to be between \$8,500 and \$16,000 per move (EPA-450/3-83-011a). These costs were included in the DCF analysis used to predict the profitability of portable plants with and without an NSPS. The estimated costs of moving include costs of minor modifications in the duct work. Thus, the costs of moving portable plants have been included in the EPA's economic analyses; and it has been determined that the costs of controls required by the standards are reasonable.

The EPA's DCF analysis indicates that for portable crushed stone and sand and gravel plants, controls required by the standards would make investment in portable plants of 150 tons per hour economically infeasible, but for plants larger than 150 tons per hour the analysis, does not indicate clear economic feasibility or infeasibility. In the DCF analysis, the feasibility of individual investments was judged by whether or not the internal rate of return is greater than the cost of equity (and thus economically feasible) or less than the cost of equity (and thus economically infeasible). For the stationary plant DCF analysis a cost of equity of 11.8 percent was assumed. For the portable plant DCF analysis a range from 12 to 15 percent was assumed for the cost of equity.

However, in order to avoid the understatement of the adverse economic consequences that would affect the industry members, several "worst-case" (i.e., from the industry point-of-view) assumptions have been made by the DCF analysis. Among the assumptions are: NSPS costs are calculated from an uncontrolled baseline (i.e., there are no SIP costs); the plant is operated as a separate business entity; cost pass-through is limited by competition from existing plants in the same area; the plant will operate only 1,600 hours per year (vs. 2,000 hours per year for a stationary plant); a small crane and flatbed truck will be needed to move the portable plant baghouse; and baghouses will be used as opposed to wet dust suppression systems which cost significantly less.

The cutoff point was set at 150 tons/h because the economic analysis shows that even if the worst-case assumptions noted are relaxed, the economic viability of portable plants of this and smaller sizes remains in doubt. On the other hand, for plants larger than 150 tons/h, the benefits of "economies of

scale" increase the profitability of these plants so that NSPS costs are significantly less burdensome. Finally, it should be noted that although the economic analysis presented in the BID for the proposed standards does not show clear economic feasibility or infeasibility of the 300 tons/h portable plant with NSPS controls, it is highly unlikely that all worst-case assumptions would hold true for such a plant. In reality, if only one or two of the worst-case assumptions are relaxed, the plant is shown to be economically feasible. For these reasons, portable sand and gravel plants and crushed stone plants of 150 tons/h or smaller are exempt from the standards, but larger sized plants are covered by the standards.

In addition to the exemption for portable plants with capacities of 150 tons/h or less, exemptions have also been provided for stationary sand and gravel plants and crushed stone plants with capacities of 23 Mg/h (25 tons/h) or less and for common clay plants and pumice plants with capacities of 9 Mg/h (10 tons/h) or less. These exemptions were also based on the results of DCF analyses.

The determination of plant capacity will be based on the rated capacity of initial crushers that are part of the plant. An initial crusher is any crusher into which nonmetallic minerals can be fed without prior crushing in the plant. If a plant has only one initial crusher, the plant capacity will be considered equal to the rated capacity of the initial crusher (in tons/h). If the plant has two or more initial crushers, their rated capacities shall be added together to determine plant capacity. Production lines are composed of initial crushing and screening operations, which may be followed by secondary crushing, grinding, and screening operations. A variety of sizes of crushed products may be produced by the same line, since material may be screened and sold as product at various points in the production line. Thus, some of the output of the initial crusher may become product without passing through secondary crushers. For this reason initial crushing equipment will be used to determine the capacity of the plant.

#### *Selection of Emission Limits*

Several commenters stated that the 7 percent opacity limit for emissions discharged from a stack unless a wet scrubbing device is used is too low. Commenters suggested the limit be raised to 10 or 15 percent. Most of the commenters stated that the human eye is not calibrated well enough to distinguish between 5, 7, and 10 percent



opacity. Because observers are trained to read in 5 percent increments, they felt the limit set should be divisible by 5. Several commenters stated that EPA Reference Method 9 is only an estimation technique accurate to plus or minus 7.5 percent opacity. They questioned whether a 7 percent limit can be consistently and reliably enforced using this method. On the other hand, one commenter felt that the limit was not entirely unreasonable because a properly maintained baghouse for nonmetallic mineral processing will almost always show less than 5 percent opacity. Another commenter stated the appropriateness of the standards is confirmed through statements from persons proposing new nonmetallic mineral processing plants in San Diego County.

The EPA's opacity limit for stack emissions is well supported by test data summarized in the BID for the proposed standards. Test data from 25 baghouse controlled facilities demonstrate the achievability of the 7 percent stack opacity standard. At 21 baghouses, the maximum 6-minute average opacity was 0 percent; at 3 baghouses, the 6-minute average was 1 percent; and at 1 baghouse, it was 6 percent. The commenters did not submit any data to show they could not meet the standard, nor has EPA found a reason to raise the standard.

Opacity results from Method 9 tests represent the average of 24 readings over a 6-minute period. While each reading is recorded as an increment of 5 percent opacity, the average of all the readings can be any value. The NSPS is based on 6-minute averages and, therefore, is not limited to an increment of 5 percent opacity.

Contrary to the commenters' suggestions, Method 9 does not require that the maximum 7.5 percent positive error discussed in the section entitled *Certification Requirements* be taken into account for enforcement purposes. The only portion of Method 9 addressing the enforcement issue is the introductory section. That section requires that the accuracy of the method be considered for enforcement purposes, and describes the precision obtained for a single run by one observer. The introduction does not suggest an average positive error of 7.5 percent.

Several commenters objected to the opacity limits of 10 and 15 percent for fugitive sources. Commenters felt that these limits could not be consistently met. One commenter stated that impact crushers will easily exceed the 15 percent limit during startup periods or during periods when there is a break of material feeding in. Other commenters

suggested an opacity limit of 15 to 20 percent be set for the entire plant. One additional commenter requested the limits be 30 percent for crushers and 20 percent for all other sources. Another stated that the results of emission tests supplied by the National Lime Association show that a 10 percent limit for fugitive sources is not technologically feasible. On the other hand, one commenter stated that the proposed standards would help the State of Colorado control these sources by decreasing the allowable opacity from 20 percent. None of the commenters provided opacity data to support their comments.

The EPA's test data show that affected facilities can meet a 10 percent fugitive emissions standard (15 percent for crushers at which capture systems were not used). The EPA measured opacity of fugitives escaping from hoods and enclosures of capture systems at 53 affected facilities at 13 different types of plants. Seven plants processed nonmetallic minerals and six processed metallic minerals. The 6-minute average opacity at 35 of the 53 facilities was 0 percent. Only 2 facilities exceed 5 percent opacity at any time, and all could meet the 10 percent opacity limit.

Fugitive emissions were also tested at four crushed stone and one sand and gravel plant using wet suppression, and at another plant using wet suppression to control some operations. Two plants were portable. The plants were selected with the aid of industry representatives. At all process equipment (except crushers) being operated under normal conditions for which the wet dust suppression system was properly designed and operated, emissions were below 5 percent opacity. At crushers operated under the same conditions, emissions were below 15 percent opacity. Based on these data, plants using wet suppression should be able to meet the fugitive opacity standards of 10 percent for all affected facilities, except crushers where capture systems are not used. The standard for such crushers is 15 percent. If a plant cannot meet these standards using wet suppression, baghouses can be used.

#### *Test Methods and Monitoring*

Some commenters stated that when pieces of processing equipment are located next to each other, it would be impossible to ascertain how much dust is coming from each piece of equipment or to state with certainty that each piece meets the required level. The commenters questioned the enforceability of opacity standards for individual pieces of equipment.

The EPA believes situations where opacity of emissions from individual affected facilities cannot be read will be rare; however, provisions have been added to § 60.675(c) of the regulation clarifying how compliance will be determined if emissions from two or more facilities interfere.

Section 60.675(c) of the proposed and final standards contains stipulations to be followed for using Method 9 to read fugitive emissions. These stipulations emphasize correct positioning of the observer to minimize interference from other emission sources. Following these stipulations, EPA found during its testing program that situations where fugitive opacity could not be measured due to emissions from other pieces of equipment occur very rarely. And they occur only when wet dust suppression is used as a control technique, not when emissions are collected by a capture system. Furthermore, EPA anticipates that the majority of facilities affected by the standards will be at new plants or capacity expansions at existing plants. In these cases, owners may choose to design and locate facilities so that emissions from different facilities do not continuously interfere and opacity of emissions from each facility can be measured.

However, since it is possible that there may be cases where emissions from two or more facilities continuously interfere, provisions have been added to § 60.675(c) clarifying the use of Method 9 in such cases. Under these provisions, if the opacity of emissions from a single affected facility cannot be measured due to the continuous interference of emissions from other facilities, then plants may take one of two courses of action: (1) The equipment may be moved or a physical barrier or ductwork may be installed to separate emissions from each facility; or (2) if the opacity of the combined emission stream from the interfering facilities meets the highest opacity standard applicable to any of the affected facilities contributing to the emissions, then the facilities will be determined to be in compliance. For example, if emissions from a screen and a crusher controlled by wet dust suppression continuously interfere, the owner or operator could meet the standards by showing that combined emissions from the two facilities meet the 15 percent fugitive opacity standard applicable to the crusher, or he could separate the equipment or the emissions from the 2 facilities and meet the opacity limits for each (10 percent for the screen and 15 for the crusher). Under the standards, the owner or operator

would also have the option of capturing emissions, ducting them to a control device and meeting the applicable stack and fugitive emissions standards. The economic analyses for the proposed standards assumed emissions from all affected facilities would be captured and ducted to baghouses; and under this assumption the costs of control were found to be reasonable. However, EPA believes offering the other options to show compliance may allow some plants to comply using a less costly method such as wet dust suppression.

Commenters disagreed with the monitoring requirements proposed for wet scrubbers. One commenter stated that while he did not oppose the replacement of an opacity standard with monitoring of operating parameters, he suggested that a range, rather than one set of numbers, be selected during the initial performance test. He said this approach would allow for slight variations in processing conditions such as outside temperature, clay content, and particle size. Another commenter stated that maintaining a given pressure drop and flow rate is no guarantee that a scrubber is achieving the desired efficiency. He also said that under the proposed standards pressure drops and water flows could vary widely and emission rates could soar, but as long as measurements were recorded, the scrubber would be in compliance.

The EPA has made additions to § 60.676 of the proposed standards which address these comments. The section details requirements for periodically recording and reporting scrubber operating parameters.

The EPA has provided for routine variations in operating parameters but by a different method than that suggested by the first commenter. The owner or operator is required in the final standards to record and report the liquid flow rate and pressure drop at the time of the initial performance test, and these parameters are to be recorded daily thereafter [40 CFR 60.676(c)]. These daily readings need not be reported unless one or more readings vary by more than  $\pm 30$  percent from the readings of the most recent performance test. If one or more readings does vary by more than  $\pm 30$  percent, these daily readings must be reported semiannually. The  $\pm$  percent allows for normal variations in process conditions, so selecting a range of values at the time of the initial performance test is not necessary.

In response to the comment on monitoring scrubber operating parameters, the recording and reporting of scrubber liquid flow rate and pressure

drop will provide an inexpensive and easily verifiable check on the operation and maintenance of wet scrubbers. The principal factors affecting the performance of scrubbers include the pressure drop and the liquid to gas ratio. Monitoring liquid flow rate and pressure drop will allow maintenance personnel to detect and correct decreases in scrubber performance before major breakdowns occur, reducing overall control cost, and maintaining control efficiency. Routine recording and reporting will also allow EPA a check to ensure that the scrubber is maintained and operated properly, indicating that the emission limits continue to be met over time. As described above, daily readings must be recorded and they must be reported to EPA semiannually if one or more readings varies by more than  $\pm 30$  percent from the readings of the most recent performance test.

#### Miscellaneous Comments

One commenter requested clarification as to whether the proposed standards apply to crushers and grinders that are used in combination with dryers operated by combustion or other means.

Such crushers and grinders are covered by the standards; they fall within the definitions in the proposed and promulgated standards.

Several commenters asked for clarification as to which conveying systems are subject to the standards and which are exempt. In addition, they requested clarification on which portions of the conveying systems are covered.

To clarify, belt conveyors are the designated affected facilities; however, only transfer points must comply with the emissions limits. In the preamble to the proposed regulation, it is clearly stated that conveyors, other than transfer points, are not covered by the emission limits (48 FR 39568). The proposed and promulgated standards for particulate matter emissions state that no owner or operator "shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity \* \* \* [40 CFR 60.672(b)]. A transfer point is defined as "a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile" (40 CFR 60.671). Thus, belt conveyors are affected facilities, but only transfer points must meet the emission limits.

Commenters requested clarification as to when the 2-year period begins for

consideration for the reconstruction provisions. In addition, they were confused about whether a continuous program of component replacement is one which is proposed or initiated within a 2-year period or one where the equipment is actually installed within a 2-year period.

The 2-year period begins when reconstruction is commenced. "Commenced" is defined in the general provisions (40 CFR 60.2) as meaning that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake or complete, within a reasonable time, a continuous program of construction or modification.

There is not a single 2-year period that begins on any specified date. Rather, EPA will aggregate any continuous programs of component replacement that *begin* within any 2-year period in determining whether "[t]he fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility . . ." [40 CFR 60.15(b)(1)] (the "50 percent test.") For example, suppose that an owner or operator of an existing facility begins program A of component replacement in month 1, program B in month 40, program C in month 60, and program D in month 80, and that programs B and C, considered together, meet the 50 percent test in 40 CFR 60.15(b)(1). Since programs B and C commenced within a 2-year period (20 months apart), the 50 percent test would be satisfied (regardless of programs A and D, and regardless of when programs B and C are finished.)

#### Administrative

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, since 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 intelligently and effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated standards and EPA responses to significant comments, the contents of the docket will serve as the record in case of judicial review (Section 307(d)(7)(A)).

The effective date of this regulation is August 1, 1985. Section 111 of the Clean Air Act provides that standards of

performance or revisions thereof become effective upon promulgation and apply to affected facilities, construction, reconstruction, or modification of which was commenced after the date of proposal (August 31, 1983).

As prescribed by section 111, the promulgation of these standards was preceded by the Administrator's determination (40 CFR 60.16; 44 FR 49222, August 21, 1979) that this source category contributes significantly to air pollution that may reasonably be anticipated to endanger public health or welfare. In accordance with section 117 of the Act, publication of these promulgated standards was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies.

This regulation will be reviewed 4 years from the date of promulgation as required by the Clean Air Act. This review will include an assessment of such factors as the need for integration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology, and reporting requirements.

Section 317 of the Clean Air Act requires the Administrator to prepare an economic impact assessment for any NSPS promulgated under Section 111(b) of the Act. An economic impact assessment was prepared for this regulation and for other regulatory alternatives. All aspects of the assessment were considered in the formulation of the standards to ensure that cost was carefully considered in determining BDT. The economic impact assessment is included in the BID for the proposed standards.

Information collection requirements associated with this regulation (those included in 40 CFR Part 60, Subpart A and Subpart 000) have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 350 *et seq.* and have been assigned OMB control number 2060-0050.

Under Executive Order 12291, EPA is required to judge whether a regulation is "major" and therefore subject to the requirement of a regulatory impact analysis (RIA). This regulation is not major because it would result in none of the adverse economic effects set forth in Section 1 of the Order as grounds for finding a regulation to be major. The industry-wide annualized costs in the fifth year after the standards would go into effect would be \$34 million, much less than the \$100 million established as the first criterion for a major regulation in the Order. The estimated price increase of less than 2 percent

associated with the standards would not be considered a "major increase in costs or prices" specified as the second criterion in the Order. The economic analysis of the proposed standards' effects on the industry did not indicate any significant adverse effects on competition, investment, productivity, employment, innovation, or the ability of U.S. firms to compete with foreign firms (the third criterion in the Order).

This regulation was submitted to OMB for review as required by Executive Order 12291. Any written communications between OMB and EPA pertaining to the standards have been put in the docket.

The Regulatory Flexibility Act of 1980 requires that adverse effects of all Federal regulations upon small businesses be identified. In performing the economic impact analysis, EPA assumed that each plant would operate as a separate business entity and could not expect to finance the control equipment from another business activity or parent firm. In addition, no SIP control costs were assumed to be incurred in the absence of an NSPS. The results of this analysis showed that for each mineral industry, the annualized control cost in the fifth year divided by the annual output is less than 2 percent of the price of a ton of product. The economic impacts associated with standards based on baghouse control techniques would not preclude the building of most new plants. However, DCF analysis indicated that the incremental costs associated with the use of baghouse control might preclude the construction of new common clay plants and pumice plants with capacities of 9 Mg/h (10 tons/h) or less, fixed sand and gravel plants and crushed stone plants with capacities of 23 Mg/h (25 tons/h) or less, and portable sand and gravel plants and crushed stone plants with capacities of 136 Mg/h (105 tons/h) or less. Therefore, these plants are exempt from the standards. Based on the economic analysis and exemptions, no plants would suffer significant economic impacts under this NSPS.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that the rule will not have a significant economic impact on a substantial number of small entities because the impact of the final rule is not significant.

#### List of Subjects in 40 CFR Part 60

Air pollution control, Incorporation by reference, Nonmetallic mineral processing plants, reporting and recordkeeping requirements, Intergovernmental relations.

Dated: July 22, 1985.

Lee M. Thomas,  
Administrator.

#### PART 60—[AMENDED]

40 CFR Part 60 is amended as follows:

1. The authority citation for Part 60 continues to read as follows:

Authority: 42 U.S.C. 7411, 7414, and 7601(a).

2. By adding a new Subpart 000 as follows:

#### Subpart 000—Standards of Performance for Nonmetallic Mineral Processing Plants

Sec.  
60.670 Applicability and designation of affected facility.  
60.671 Definitions.  
60.672 Standard for particulate matter.  
60.673 Reconstruction.  
60.674 Monitoring of operations.  
60.675 Test methods and procedures.  
60.676 Reporting and recordkeeping.

#### Subpart 000—Standards of Performance for Nonmetallic Mineral Processing Plants.

##### § 60.670 Applicability and designation of affected facility.

(a) Except as provided in paragraphs (b), (c) and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station.

(b) An affected facility that is subject to the provisions of Subpart F or I or that follows in the plant process any facility subject to the provisions of Subparts F or I of this part is not subject to the provisions of this subpart.

(c) Facilities at the following plants are not subject to the provisions of this subpart:

(1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 23 megagrams per hour (25 tons per hour) or less;

(2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 136 megagrams per hour (150 tons per hour) or less; and

(3) Common clay plants and pumice plants with capacities, as defined in § 60.671, of 9 megagrams per hour (10 tons per hour) or less.

(d)(1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in § 60.671, having the same function as the

existing facility, the new facility is exempt from the provisions of §§ 60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.

(2) An owner or operator seeking to comply with this paragraph shall comply with the reporting requirements of § 60.676 (a) and (b).

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§ 60.672, 60.674 and 60.675.

(e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.

#### § 60.671 Definitions.

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in Subpart A of this part.

"Bagging operation" means the mechanical process by which bags are filled with nonmetallic minerals.

"Belt conveyor" means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

"Bucket elevator" means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

"Building" means any frame structure with a roof.

"Capacity" means the cumulative rated capacity of all initial crushers that are part of the plant.

"Capture system" means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

"Control device" means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

"Conveying system" means a device for transporting materials from one piece of equipment or location to another location within a plant.

Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

"Crusher" means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the

following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

"Enclosed truck or railcar loading station" means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

"Fixed plant" means any nonmetallic mineral processing plant at which the processing equipment specified in § 60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

"Fugitive emission" means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

"Grinding mill" means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

"Initial crusher" means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

"Nonmetallic mineral" means any of the following minerals or any mixture of which the majority is any of the following minerals:

(a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(b) Sand and Gravel.

(c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(d) Rock Salt.

(e) Gypsum.

(f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(g) Pumice.

(h) Gilsonite.

(i) Talc and Pyrophyllite.

(j) Boron, including Borax, Kernite, and Colemanite.

(k) Barite.

(l) Fluorospars.

(m) Feldspar.

(n) Diatomite.

(o) Perlite.

(p) Vermiculite.

(q) Mica.

(r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

"Nonmetallic mineral processing plant" means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power

plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in § 60.670 (b) and (c).

"Portable plant" means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

"Production line" means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

"Screening operation" means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

"Size" means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

"Stack emission" means the particulate matter that is released to the atmosphere from a capture system.

"Storage bin" means a facility for storage (including surge bins) or nonmetallic minerals prior to further processing or loading.

"Transfer point" means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

"Truck dumping" means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: trucks, front end loaders, skip hoists, and railcars.

"Vent" means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

**§ 60.672 Standard for particulate matter.**

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:

(1) Contain particulate matter in excess of 0.05 g/dscm; or

(2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of § 60.676(c), (d), and (e).

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d) and (e) of this section.

(c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

(e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a), (b) and (c) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) No owner or operator shall cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in § 60.671.

(2) No owner or operator shall cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions

which exceed the stack emissions limits in paragraph (a) of this section.

**§ 60.673 Reconstruction.**

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under § 60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.

(b) Under § 60.15, the "fixed capital cost of the new components" includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

**§ 60.674 Monitoring of operations.**

The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

(a) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 250$  pascals  $\pm 1$  inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 5$  percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

**§ 60.675 Test methods and procedures.**

(a) Reference methods in Appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with the standards prescribed under § 60.672 as follows:

(1) Method 5 or Method 17 for concentration of particulate matter and associated moisture content;

(2) Method 1 for sample and velocity traverses;

(3) Method 2 for velocity and volumetric flow rate;

(4) Method 3 for gas analysis;

(5) Method 9 for measuring opacity from stack emissions and process

fugitive emissions, and emissions from building vents;

(6) Method 22 for measurement of visible fugitive emissions when determining compliance with the standard prescribed in § 60.672(e).

(b) For Method 5, the following stipulations shall apply:

(1) The sampling probe and filter holder may be operated without heaters if the gas stream being sampled is at ambient temperature;

(2) For gas streams above ambient temperature, the sampling train shall be operated with a probe and filter temperature high enough to prevent water condensation on the filter but no higher than 121°C (250°F);

(3) The minimum sample volume shall be 1.7 dscm (60 dscf).

(c) When determining compliance with the standard prescribed under § 60.672(b) and (c), the Administrator shall adhere to the following stipulations in addition to those listed in Method 9:

(1) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(2) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). Note that the required observer position relative to the sun (Method 9, Section 2.1) must be followed.

(3) For affected facilities utilizing wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of the emissions is to be made at a point in the plume where the mist is no longer visible.

(4) If emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, the owner or operator may show compliance with the fugitive opacity standards in § 60.672(b) and (c) by—

(i) Causing the opacity of the combined emission stream from the facilities to meet the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream, or

(ii) Separating emissions so that the opacity of emissions from each affected facility can be read to determine compliance with the applicable fugitive opacity limits specified for each facility in § 60.672(b) and (c).

(d) When determining compliance with the standard prescribed under

§ 60.672(b) and (c), using Method 9, each performance test shall consist of a minimum of 30 sets of 24 consecutive observations recorded at 15-second intervals, as described in Method 9 at sections 2.4 and 2.5.

(e) When determining compliance with the standard prescribed under § 60.672(e), using Method 22, the minimum total observation period for each building shall be 75 minutes, and each side of the building and the roof shall be observed for a minimum of 15 minutes. Performance tests shall be conducted while all affected facilities inside the building are operating.

**§ 60.676 Reporting and recordkeeping.**

(a) Each owner or operator seeking to comply with § 60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.

(1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

(i) The rated capacity in tons per hour of the existing facility being replaced and

(ii) The rated capacity in tons per hour of the replacement equipment.

(2) For a screening operation:

(i) The total surface area of the top screen of the existing screening operation being replaced and

(ii) The total surface area of the top screen of the replacement screening operation.

(3) For a conveyor belt:

(i) The width of the existing belt being replaced and

(ii) The width of the replacement conveyor belt.

(4) For a storage bin:

(i) The rated capacity in tons of the existing storage bin being replaced and

(ii) The rated capacity in tons of replacement storage bins.

(b) Each owner or operator seeking to comply with § 60.670(d) shall submit the following data to the Director of the Emission Standards and Engineering Division, (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

(1) The information described in § 60.676(a).

(2) A description of the control device used to reduce particulate matter emissions from the existing facility and a list of all other pieces of equipment controlled by the same control device; and

(3) The estimated age of the existing facility.

(c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ

by more than  $\pm 30$  percent from those measurements recorded during the most recent performance test.

(e) The reports required under paragraph (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in § 60.672, including reports of opacity observations made using Method 9 to demonstrate compliance with § 60.672 (b) and (c) and reports of observations using Method 22 to demonstrate compliance with § 60.672(e).

(g) The requirements of this paragraph remain in force until and unless the Agency, in delegating enforcement authority to a State under Section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with paragraphs (a), (c), (d), (e), and (f) of this subsection, provided that they comply with requirements established by the State. Compliance with paragraph (b) of this section will still be required.

(Approved by the Office of Management and Budget under control number 2060-0050)

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