

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 63

[Docket ID No. OAR-2002-0052; FRL-7551-7]

RIN 2060-AG72

National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national emission standards for hazardous air pollutants (NESHAP) for the lime manufacturing source category. The lime manufacturing emission units regulated will include lime kilns, lime coolers, and various types of processed stone handling (PSH) operations. The EPA has identified the lime manufacturing industry as a major source of hazardous air pollutant (HAP) emissions including, but not limited to, hydrogen chloride (HCl), antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, mercury, nickel, and selenium. Exposure to these substances has been demonstrated to cause adverse health effects such as cancer; irritation of the lung, skin, and mucus membranes; effects on the central nervous system; and kidney damage. The final NESHAP will require all major sources subject to the rule to meet HAP emission standards reflecting the application of maximum achievable control technology (MACT). Implementation of the final NESHAP will reduce non-volatile and semi-volatile metal HAP emissions from the lime manufacturing industry source category by approximately 6.5 tons per year (tpy) and will reduce emissions of particulate matter (PM) by 5,900 tpy.

EFFECTIVE DATE: January 5, 2004.

ADDRESSES: *Docket.* The EPA has established an official public docket for this action including both Docket ID No. OAR-2002-0052 and Docket ID No. A-95-41. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. All items may not be listed under both docket numbers, so interested parties

should inspect both docket numbers to ensure that they have received all materials relevant to the final rule. The official public docket is available for public viewing at the EPA Docket Center (Air Docket), EPA West, Room B-102, 1301 Constitution Avenue, NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: For further information concerning applicability and rule determinations, contact the appropriate State or local agency representative. For information concerning analyses performed in developing the final NESHAP, contact Keith Barnett, U.S. EPA, Emission Standards Division, Minerals and Inorganic Chemicals Group, C504-05, Research Triangle Park, North Carolina 27711, (919) 541-5605, *barnett.keith@epa.gov*.

SUPPLEMENTARY INFORMATION: *Docket.* The EPA has established an official public docket for this action including both Docket ID No. OAR-2002-0052 and Docket ID No. A-95-41. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. All items may not be listed under both docket numbers, so interested parties should inspect both docket numbers to ensure that they have received all materials relevant to the final rule. Although a part of the official public docket, the public docket does not include Confidential Business Information or other information whose disclosure is restricted by statute. The docket is a dynamic file because information is added throughout the rulemaking process. The docketing system is intended to allow members of the public and industries involved to easily 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, excluding interagency review materials, will serve as the record in the case of judicial review. (See section 307(d)(7)(A) of the Clean Air Act

(CAA).) The regulatory text and other materials related to this rulemaking are available for review in the docket, or copies may be mailed from the Air Docket on request by calling (202) 566-1742. A reasonable fee may be charged for copying docket materials. *Electronic Access.* You may access this **Federal Register** document electronically through the EPA Internet under the “**Federal Register**” listings at <http://www.epa.gov/fedrgstr/>. An electronic version of the public docket is available through EPA’s electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at <http://www.epa.gov/edocket/> to access the index of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Once in the system, select “search,” then key in the appropriate docket identification number.

Certain types of information will not be placed in the EPA dockets.

Information claimed as confidential business information (CBI) and other information whose disclosure is restricted by statute, which is not included in the official public docket, will not be available for public viewing in EPA’s electronic public docket. The EPA’s policy is that copyrighted material will not be placed in EPA’s electronic public docket but will be available only in printed, paper form in the official public docket. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified in this document.

Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of today’s final NESHAP will also be available on the WWW through the Technology Transfer Network (TTN). Following signature, a copy of this action will be posted on the TTN’s policy and guidance page for final rules at <http://www.epa.gov/ttn/oarpg>. The TTN provides information and technology exchange in various areas of air pollution control. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541-5384.

Regulated Entities. Categories and entities potentially regulated by this action include:

Category	NAICS	Examples of regulated entities
	32741 33111 3314	Commercial lime manufacturing plants. Captive lime manufacturing plants at iron and steel mills. Captive lime manufacturing plants at nonferrous metal production facilities.

Category	NAICS	Examples of regulated entities
	327125	Producers of dead-burned dolomite (Non-clay refractory manufacturing).

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in § 63.7081 of the final NESHAP. If you have any questions regarding the applicability of this action to a particular entity, consult the technical contact person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Judicial Review. The NESHAP for Lime Manufacturing were proposed in December 20, 2002 (67 FR 78046). This action announces EPA's final decisions on the NESHAP. Under section 307(b)(1) of the CAA, judicial review of the final NESHAP is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by March 5, 2004. Under section 307(d)(7)(B) of the CAA, only an objection to a rule or procedure raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the CAA, the requirements established by the final NESHAP may not be challenged separately in any civil or criminal proceeding brought to enforce these requirements.

Outline. The information presented in this preamble is organized as follows:

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 - F. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments
 - G. Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks
 - H. Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use
 - I. National Technology Transfer and Advancement Act
 - J. Congressional Review Act

I. Introduction

A. What Is the Purpose of the Final NESHAP?

The purpose of the final NESHAP is to protect the public health by reducing emissions of HAP from lime manufacturing plants.

B. What Is the Source of Authority for Development of NESHAP?

Section 112(c) of the CAA requires us to list categories and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. We listed Lime Manufacturing in the category of major sources on July 16, 1992 (57 FR 31576). Major sources of HAP are those that have the potential to emit, considering controls, 10 tpy or more of any one HAP or 25 tpy or more of any combination of HAP.

C. What Criteria Are Used in the Development of NESHAP?

Section 112(d) of the CAA requires that we establish NESHAP for the control of HAP from both new and

existing major sources. The CAA requires NESHAP to reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator of EPA determines has been adequately demonstrated. This level of control is commonly referred to as MACT.

The CAA further provides that MACT standards must attain at least a minimum level of stringency, known as the MACT floor. The MACT floor is the minimum control level allowed for NESHAP and is defined under section 112(d)(3) of the CAA. In essence, the MACT floor ensures that the standard is set at a level that assures that all major sources achieve the level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The MACT 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 in the category or subcategory (or the best-performing 5 sources for categories or subcategories with fewer than 30 sources) for which the Agency has emissions information.

In developing MACT, we also consider control options that are more stringent than the floor. We may establish standards more stringent than the floor based on the consideration of cost of achieving the emissions reductions, any health and environmental impacts, and energy requirements.

D. How Was the Final NESHAP Developed?

We used several resources to develop the final NESHAP, including questionnaire responses from industry, emissions test data, site surveys of lime manufacturing facilities, operating and new source review permits, permit applications, and comments on the proposed rule. We researched the relevant technical literature and existing State and Federal regulations and

consulted and met with representatives of the lime manufacturing industry, State and local representatives of air pollution agencies, Federal agency representatives (e.g., United States Geological Survey) and emission control and emissions measurement device vendors in developing the final NESHAP. We also conducted an extensive emissions test program. Industry representatives provided emissions test data, arranged site surveys of lime manufacturing plants, participated in the emissions test program, reviewed draft questionnaires, provided information about their manufacturing processes and air pollution control technologies, and identified technical and regulatory issues. State representatives provided existing emissions test data, copies of permits and other information.

E. What Are the Health Effects of the HAP Emitted From the Lime Manufacturing Industry?

The HAP emitted by lime manufacturing facilities include, but are not limited to, HCl, antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, mercury, nickel, and selenium. Exposure to these compounds has been demonstrated to cause adverse health effects when present in concentrations higher than those typically found in ambient air.

We have detailed data on each of the currently operating facilities for emissions of HCl. Human exposures to ambient levels of HCl resulting from lime manufacturing facilities' emissions were estimated by industry as part of the risk assessment they conducted for purposes of demonstrating, pursuant to section 112(d)(4) of the CAA, that HCl emissions from lime kilns are below the threshold level of adverse effects, within an ample margin of safety.

We do not have the type of current detailed data on each of the facilities that will be covered by the final NESHAP, and the people living around the facilities, that will be necessary to conduct an analysis to determine the actual population exposures to the metals HAP emitted from these facilities and the potential for resultant health effects. Therefore, we do not know the extent to which the adverse health effects described below occur in the populations surrounding these facilities. However, to the extent the adverse effects do occur, the final NESHAP will reduce emissions and subsequent exposures.

The HAP that will be controlled with the final NESHAP are associated with a variety of adverse health effects, including chronic health disorders (e.g.,

irritation of the lung, skin, and mucus membranes; effects on the central nervous system; cancer; and damage to the kidneys), and acute health disorders (e.g., lung irritation and congestion, alimentary effects such as nausea and vomiting, and effects on the kidney and central nervous system). We have classified three of the HAP—arsenic, chromium, and nickel—as human carcinogens and three others—beryllium, cadmium, and lead—as probable human carcinogens.

F. What Are Some Lime Manufacturing Industry Characteristics?

There are approximately 70 commercial and 40 captive lime manufacturing plants in the U.S., not including captive lime manufacturing operations at pulp and paper production facilities. About 30 of the captive plants in the U.S. produce lime that is used in the beet sugar manufacturing process, but captive lime manufacturing plants are also found at steel, other metals, and magnesia production facilities. Lime is produced in about 35 States and Puerto Rico by about 47 companies, which include commercial and captive producers (except for lime manufacturing plants at pulp and paper production facilities), and those plants which produce lime hydrate only.

G. What Are the Processes and Their Emissions at a Lime Manufacturing Plant?

There are many synonyms for lime, the main ones being quicklime and its chemical name, calcium oxide. High calcium lime consists primarily of calcium oxide, and dolomitic lime consists of both calcium and magnesium oxides. Lime is produced via the calcination of high calcium limestone (calcium carbonate) or other highly calcareous materials such as aragonite, chalk, coral, marble, and shell; or via the calcination of dolomitic limestone. Calcination occurs in a high temperature furnace called a kiln, where lime is produced by heating the limestone to about 2000° F, driving off carbon dioxide in the process. Dead-burned dolomite is a type of dolomitic lime produced to obtain refractory characteristics in the lime.

The kiln is the heart of the lime manufacturing plant, where various fossil fuels (such as coal, petroleum coke, natural gas, and fuel oil) are combusted to produce the heat needed for calcination. There are five different types of kilns: rotary, vertical, double-shaft vertical, rotary hearth, and fluidized bed. The most popular is the rotary kiln, but the double-shaft vertical kiln is an emerging new kiln technology

gaining in acceptance because of its energy efficiency. Rotary kilns may also have preheaters associated with them to improve energy efficiency. As discussed further in this preamble, additional energy efficiency is obtained by routing exhaust from the lime cooler to the kiln, a common practice. Emissions from lime kilns include, but are not limited to, metallic HAP, HCl, PM, sulfur dioxide, nitrogen oxides, and carbon dioxide. These emissions predominately originate from compounds in the limestone feed material and fuels (e.g., metals, sulfur, chlorine) and are formed from the combustion of fuels and the heating of feed material in the kiln.

All types of kilns use external equipment to cool the lime product, except vertical (including double-shaft) kilns, where the cooling zone is part of the kiln. Ambient air is most often used to cool the lime (although a few use water as the heat transfer medium), and typically all of the heated air stream exiting the cooler goes to the kiln to be used as combustion air for the kiln. The exception to this is the grate cooler, where more airflow is generated than is needed for kiln combustion, and consequently a portion (about 40 percent) of the grate cooler exhaust is vented to the atmosphere. We estimate that there are about five to ten kilns in the U.S. that use grate coolers. The emissions from grate coolers include the lime dust (PM) and the trace metallic HAP found in the lime dust.

Lime manufacturing plants may also produce hydrated lime (also called calcium hydroxide) from some of the calcium oxide (or dolomitic lime) produced. Hydrated lime is produced in a hydrator via the chemical reaction of calcium oxide (or magnesium oxide) and water. The hydration process is exothermic, and part of the water in the reaction chamber is converted to steam. A wet scrubber is integrated with the hydrator to capture the lime (calcium oxide and calcium hydroxide) particles carried in the gas steam, with the scrubber water recycled back to the hydration chamber. The emissions from the hydrator are the PM comprised of lime and hydrated lime.

Operations that prepare the feed materials and fuels for the kiln and process the lime product for shipment or further on-site use are found throughout a lime manufacturing plant. The equipment includes grinding mills, crushers, storage bins, conveying systems (such as bucket elevator, belt conveyors), bagging systems, bulk loading or unloading systems, and screening operations. The emissions from these operations include limestone

and lime dust (PM) and the trace metallic HAP found in the dust.

II. Summary of the Final NESHAP

A. What Lime Manufacturing Plants Are Subject to the Final NESHAP?

The final NESHAP will regulate HAP emissions from all new and existing lime manufacturing plants that are major sources, co-located with major sources, or are part of major sources. However, lime manufacturing plants located at pulp and paper mills or at beet sugar factories are not subject to the final NESHAP. Other captive lime manufacturing plants, such as (but not limited to) those at steel mills and magnesia production facilities, will be subject to the final NESHAP. See 67 FR 78053 explaining the basis for these determinations. We define a lime manufacturing plant as any plant which uses a lime kiln to produce lime product from limestone or other calcareous material by calcination. However, we specifically exclude lime kilns that use only calcium carbonate waste sludge from water softening processes as the feedstock. Lime product means the product of the lime kiln calcination process including calcitic lime, dolomitic lime, and dead-burned dolomite.

B. How Do We Define the Affected Source and What Emissions Units Are Included?

The final NESHAP defines the affected source as follows: each lime kiln and its associated cooler, each individual PSH system. The individual types of emission units in a PSH system are conveying system transfer points, bulk loading or unloading systems, screening operations, bucket elevators, and belt conveyors—if they follow the processed stone storage bin or storage pile in the sequence of PSH operations. The materials processing operations (MPO) associated with lime products (such as quicklime and hydrated lime), lime kiln dust handling, quarry or mining operations, limestone sizing operations, and fuels are not subject to today's final NESHAP. Processed stone handling operations are further distinguished in the final NESHAP as follows: (1) Whether their emissions are vented through a stack, (2) whether their emissions are fugitive emissions, (3) whether their emissions are vented through a stack with some fugitive emissions from the partial enclosure, and/or (4) whether the source is enclosed in a building. Finally, lime hydrators and cooler nuisance dust collectors are not included under the

definition of affected source under the final NESHAP.

C. What Pollutants Are Regulated by the Final NESHAP?

The final NESHAP establishes PM emission limits for lime kilns, coolers, and PSH operations with stacks. Particulate matter will be measured solely as a surrogate for the non-volatile and semi-volatile metal HAP. Particulate matter of course is not itself a HAP, but is a typical and permissible surrogate for HAP metals. See *National Lime Ass'n v. EPA*, 233 F. 3d 625, 637–40 (D.C. Cir., 2000). The final NESHAP also regulate opacity or visible emissions from most of the PSH operations, with opacity also serving as a surrogate for non-volatile and semi-volatile HAP metals.

D. What Are the Emission Limits and Operating Limits?

Emission Limits

The PM emission limit for the existing kilns and coolers is 0.12 pounds PM per ton of stone feed (lb/tsf) for kilns using dry air pollution control systems prior to January 5, 2004. Existing kilns that have installed and operating wet scrubbers prior to January 5, 2004 must meet an emission limit of 0.60 lb/tsf. Kilns which meet the criteria for the 0.60 lb/tsf emission limit must continue to use a wet scrubber for PM emission control in order to be eligible to meet the 0.60 lb/tsf limit. If at any time such a kiln switches to a dry control, they would become subject to the 0.12 lb/tsf PM emission limit, regardless of the type of control device used in the future. The PM emission limit for all new kilns and lime coolers is 0.10 lb/tsf. As a compliance option, these emission limits (except for the 0.60 lb/tsf limit) may be applied to the combined emissions of all the kilns and coolers (assuming the cooler(s) has a separate exhaust vent to the atmosphere) at the lime manufacturing plant. In other words, the sum of the PM emissions from all of the kilns and coolers at the lime manufacturing plant, divided by the sum of the production rates of the kilns at the existing lime manufacturing plant, will be used to determine compliance with the appropriate emission limit for kilns and coolers. If the lime manufacturing plant has both new and existing kilns and coolers, then the emission limit will be an average of the existing and new kiln PM emissions limits, weighted by the annual actual production rates of the individual kilns, except that no new kiln may exceed the PM emission level of 0.10 lb/tsf. Kilns that are required to

meet a 0.60 lb/tsf PM emission limit must meet that limit individually, and may not be included in any averaging calculations.

Emissions from PSH operations that are vented through a stack will be subject to a limit of 0.05 grams PM per dry standard cubic meter (g/dscm) PM and 7 percent opacity. Stack emissions from PSH operations that are controlled by wet scrubbers are subject to the 0.05 g/dscm but not subject to the opacity limit. Fugitive emissions from PSH operations are subject to a 10 percent opacity limit.

For each building enclosing any PSH operation, each of the affected PSH operations in the building must comply individually with the applicable PM and opacity emission limitations discussed above. Otherwise, there must be no visible emissions from the building, except from a vent, and the building's vent emissions must not exceed 0.05 g/dscm and 7 percent opacity. For each fabric filter (FF) that controls emissions from only an individual, enclosed processed stone storage bin, the opacity must not exceed 7 percent. For each set of multiple processed stone storage bins with combined stack emissions, emissions must not exceed 0.05 g/dscm and 7 percent opacity. Because the opacity requirement for PSH operations is used as an indicator that a control device is functioning properly, it is not appropriate, or meaningful, to average the opacity readings from multiple PSH operations. The final rule does not allow averaging of PSH operations.

We are not regulating HCl emissions from lime kilns in the final NESHAP. Under the authority of section 112(d)(4) of the CAA, we have determined that no further control is necessary because HCl is a "health threshold pollutant," and HCl levels emitted from lime kilns are below the threshold value within an ample margin of safety. See generally, 67 FR 78054–057. As explained there, the risk analysis sought to assure that emissions from every source in the category result in exposures less than the threshold level even for an individual exposed at the upper end of the exposure distribution. The upper end of the exposure distribution is calculated using the "high end exposure estimate," defined as a plausible estimate of individual exposure for those persons at the upper end of the exposure distribution, conceptually above the 90th percentile, but not higher than the individual in the population who has the highest exposure. We believe that assuring protection to persons at the upper end of the exposure distribution is consistent with

the “ample margin of safety” requirement in section 112(d)(4).

In the proposed rule, we published the results of the risk analysis on which we based this decision. More information on the risk analysis may be found in the published proposed rule (67 FR 78054–78057) and in the docket. We received only one comment on our risk analysis.

We also are not establishing a limit for mercury emissions from lime kilns. The only control technique would reflect control of the raw materials and/or fossil fuels. This control is not duplicable or replicable. We also determined that an emission limit for mercury based on a beyond-the-MACT-floor option is not justified after consideration of the cost, energy, and non-air environmental impacts. See 67 FR 78057 for additional discussion. We received no adverse comments on this aspect of the rule as proposed.

Operating Limits

For lime kilns that use a wet scrubber PM control device, you are required to maintain the 3-hour block average gas stream pressure drop across the scrubber and the 3-hour block average scrubber liquid flow rate equal to or above the levels for the parameters that were established during the PM performance test.

For kilns using a FF or electrostatic precipitator (ESP) PM control device, you must monitor opacity (as an operating limit) with a continuous opacity monitoring system (COMS). You are required to install and operate the COMS in accordance with Performance Specification 1 (PS-1), 40 CFR part 60, Appendix B, and maintain the opacity level of the lime kiln exhaust at or below 15 percent for each 6-minute block period. Facilities that installed COMS on or before February 6, 2001, should continue to meet the requirements in effect in 40 CFR part 60, Appendix B, at the time of COMS installation unless specifically required to re-certify the COMS by their permitting authority.

As an alternative to a COMS, lime kilns that use ESP or FF PM controls can elect to monitor PM levels with a PM detector that meets the requirements in § 63.7113(e) of the final rule. You must maintain and operate the ESP or FF such that the PM detector alarm is not activated, and the alarm condition does not exist for more than 5 percent of the operating time in each 6-month period.

For lime kilns that use a FF PM control device, you may install, maintain and operate a bag leak detection system (BLDS) as an

alternative to a COMS or PM detector. The FF must be operated and maintained so that the BLDS alarm is not activated, and an alarm condition does not exist for more than 5 percent of the operating time in each 6-month period. The BLDS must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

For PSH operation emission points subject to a PM emission limit and controlled by a wet scrubber, you are required to collect and record the exhaust gas stream pressure drop across the scrubber and the scrubber liquid flow rate during the PM performance test. You are required to continuously maintain the 3-hour average gas stream pressure drop across the scrubber and the 3-hour average scrubber liquid flow rate equal to or above the levels for the parameters that were established during the PM performance test.

You are required to prepare a written operations, maintenance, and monitoring (OM&M) plan to cover all affected emission units. The plan must include procedures for proper operation and maintenance of each emission unit and its air pollution control device(s); procedures for monitoring and proper operation of monitoring systems in order to meet the emission limits and operating limits; standard procedures for the use of a BLDS and PM detector; and corrective actions to be taken when there is either a deviation from operating limits, or when PM detector or BLDS alarms indicate corrective action is necessary.

E. When Must I Comply With the Final NESHAP?

The compliance date for existing affected sources is January 5, 2004. (Three years may be needed to install new, or retrofit existing, air pollution control equipment.) A new affected source (i.e., a kiln or PSH system for which construction or reconstruction commenced after December 20, 2002) must be in compliance upon initial startup or January 5, 2007, whichever is later.

F. How Do I Demonstrate Initial Compliance With the Final NESHAP?

Kiln and Coolers

For the kiln and cooler PM emission limit, you must conduct a PM emissions test on the exhaust of each kiln at the lime manufacturing plant and measure the stone feed rate to each kiln during the test. Each individual kiln must meet their applicable PM emission limit

(0.10, 0.12, or 0.60 lb/tsf). Alternately, kilns subject to the 0.10 (new kilns) or 0.12 (existing kilns) lb/tsf PM emission limits are in compliance if the sum of the emissions from these kilns at the lime manufacturing plant, divided by the sum of the stone feed rates entering each of these kilns, do not exceed the applicable PM emission limit, or if the facility has both new and existing kilns, it must not exceed an average of the 0.12 and 0.10 lb/tsf PM emission limits weighted by individual kiln throughput. Kilns subject to the 0.60 lb/tsf PM emission limit can not be included in any averaging scheme. If you have a lime cooler(s) that has a separate exhaust to the atmosphere, you must conduct a PM test on the cooler's exhaust concurrently with the kiln PM test, and add the cooler emissions to the appropriate kiln emissions. For kilns with a wet scrubber, you must collect and record the applicable operating parameters during the PM performance test and then establish the operating limits based on those data.

Processed Stone Handling Operations

For PSH operations with stacks that are subject to PM emission limits, you are required to conduct a PM emissions test on each stack exhaust, and the stack emissions must not exceed the emission limit of 0.05 g/dscm. For PSH operations with stack opacity limits, you are required to conduct a 3-hour test on the exhaust in accordance with Method 9 in Appendix B of 40 CFR part 60, and each of the 30 consecutive, 6-minute opacity averages must not exceed 7 percent. The PSH operations controlled using wet scrubbers do not have an opacity limit, but you are required to collect and record the wet scrubber operating parameters during the PM performance test and then establish the applicable operating limits based on those data.

For PSH operations with fugitive emissions, you are required to conduct a Method 9 test, and each of the consecutive 6-minute opacity averages must not exceed the applicable opacity limit. These Method 9 tests are for 3 hours, but the test duration may be reduced to 1 hour if certain criteria are met. Lastly, Method 9 tests or visible emissions checks may be performed on PSH operations inside of buildings, but additional lighting, improved access to equipment, and temporary installation of contrasting backgrounds may be needed. For additional guidance, see page 116 of the “Regulatory and Inspection Manual for Nonmetallic Minerals Processing Plants,” EPA report 305-B-97-008, November 1997.

G. How Do I Continuously or Periodically Demonstrate Compliance With the Final NESHAP?

General

You are required to install, operate, and maintain each required continuous parameter monitoring system (CPMS) such that the CPMS completes a minimum of one cycle of operation for each successive 15-minute period. The CPMS will be required to have valid data from at least three equally spaced data values for that hour during periods that it is not out of control according to your OM&M plan. To calculate the block average for each 3-hour averaging period, you must have at least two of three of the hourly averages for that period using only hourly average values that are based on valid data (*i.e.*, not from out-of-control periods). When required, the 3-hour block average value for each operating parameter must be calculated as the average of each set of three successive 1-hour average values.

You are required to develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the general provisions in 40 CFR 63.6(e)(3).

Kilns and Coolers

For kilns controlled by a wet scrubber, you are required to maintain the 3-hour block average of the exhaust gas stream pressure drop across the wet scrubber greater than, or equal to, the pressure drop operating limit established during the most recent PM performance test. You are also required to maintain the 3-hour block average of the scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the most recent performance test.

Sources opting to monitor PM emissions from an ESP with a PM detector in lieu of monitoring opacity are required to maintain and operate the ESP such that the PM detector alarm is not activated, and alarm condition does not exist for more than 5 percent of the operating time in a 6-month period. Each time the alarm sounds and the owner or operator initiates corrective actions (per the OM&M plan) within 1 hour of the alarm, 1 hour of alarm time will be counted. If inspection of the ESP demonstrates that no corrective actions are necessary, no alarm time will be counted. The sensor on the PM detection system must provide an output of relative PM emissions. The PM detection system must have an alarm that will sound automatically when it detects an increase in relative PM emissions greater than a preset level. The PM detection systems are

required to be installed, operated, adjusted, and maintained according to the manufacturer's written specifications and recommendations.

Sources opting to monitor PM emissions from a FF with a BLDS or PM detector in lieu of monitoring opacity are required to maintain and operate the FF such that the BLDS or PM detector alarm is not activated, and alarm condition does not exist for more than 5 percent of the operating time in a 6-month period. Each time the alarm sounds and the owner or operator initiates corrective actions (per the OM&M plan) within 1 hour of the alarm, 1 hour of alarm time will be counted. If inspection of the FF demonstrates that no corrective actions are necessary, no alarm time will be counted. The sensor on the BLDS is required to provide an output of relative PM emissions. The BLDS is required to have an alarm that will sound automatically when it detects an increase in relative PM emissions greater than a preset level. The BLDS is required to be installed, operated, adjusted, and maintained in accordance with the manufacturer's written specifications and recommendations.

Standard operating procedures for the BLDS and PM detection systems must be incorporated into the OM&M plan. We recommend that for electrodynamic (or other similar technology) BLDS, the standard operating procedures include concepts from EPA's "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). This document may be found on the world wide web at www.epa.gov/ttn/eme.

For kilns and lime coolers monitored with a COMS, you are required to maintain each 6-minute block average opacity level at or below 15 percent opacity. For COMS installed after February 6, 2001, the COMS must be installed and operated in accordance with PS-1, 40 CFR part 60, Appendix B. Facilities that installed COMS on or before February 6, 2001, should continue to meet the requirements in effect in 40 CFR part 60, Appendix B, at the time of COMS installation unless specifically required to re-certify the COMS by their permitting authority.

Processed Stone Handling Operations

For stack emissions from PSH operations which are controlled by a wet scrubber, you are required to maintain the 3-hour average exhaust gas stream pressure drop across the wet scrubber greater than, or equal to, the pressure drop operating limit established during the most recent PM performance test. You are required to also maintain the 3-hour average

scrubbing liquid flow rate greater than, or equal to, the flow rate operating limit established during the most recent PM performance test.

For PSH operations subject to opacity limitations that do not use a wet scrubber control device, you are required to periodically demonstrate compliance as follows. You must conduct a monthly 1-minute visible emissions check of each emissions unit in the affected source. If no visible emissions are observed in six consecutive monthly tests for any emission unit, you may decrease the frequency of testing from monthly to semiannually for that emissions unit. If visible emissions are observed during any semiannual test, you must resume testing of that emissions unit on a monthly basis and maintain that schedule until no visible emissions are observed in six consecutive monthly tests.

If visible emissions are observed during any visible emissions check, you must conduct a 6-minute test of opacity in accordance with Method 9 of appendix A to part 60 of this chapter. The Method 9 test is required to begin within 1 hour of any observation of visible emissions, and the 6-minute opacity reading must not exceed the applicable opacity limit.

H. How Do I Determine if My Lime Manufacturing Plant Is a Major Source and Thus Subject to the Final NESHAP?

The final NESHAP apply to lime manufacturing plants that are major sources, co-located with major sources, or are part of major sources. Each lime facility owner/operator must determine whether their plant is a major or area source since this determines whether the lime manufacturing plant is an affected source under the final NESHAP. Section 112 of the CAA defines a major source as a "stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons/yr or more of any HAP or 25 tons/yr or more of any combination of HAP." This definition requires evaluation of the facility's potential to emit all HAP from

all emission sources in making a determination of whether the source is major or area. However, based on our data analysis, HCl is most likely the HAP that will account for the largest quantity of HAP emissions from a lime manufacturing plant. Although lime manufacturing plants emit HAP metals from most of the emission units at the plant site and organic HAP from the kiln, our analysis indicates that most likely the metal and organic HAP emissions will each be well below the 10 tpy criteria.

We are requiring that all lime manufacturing facilities potentially subject to the final NESHAP demonstrate, with an emissions test, that they emit less than 10 tpy of HCl if they wish to claim area source status. We are allowing three HCl test methods to be used. These are EPA Method 320 or 321 in Appendix A to 40 CFR part 63, or ASTM Method D 6735-01. If ASTM Method D 6735-01 is used, we require that the paired-train option in section 11.2.6 and the post-test analyte spike option in section 11.2.7 be used.

III. Summary of Changes Since Proposal

We proposed a PM standard (as a surrogate for non-mercury HAP metals) of 0.12 lb/tsf reflecting the performance of dry pollution control systems (baghouses). We also solicited comment on having a separate PM standard of 0.60 lb/tsf for kilns controlled with wet scrubbers. In the final rule, we have decided to adopt these two different standards for PM emissions from existing lime kilns. We are also indicating that existing kilns subject to the 0.60 lb/tsf PM emission limit are not to be included in any averaging scheme for demonstrating compliance with a PM standard.

In the proposed NESHAP, we required facilities using wet scrubbers to monitor scrubber pressure drop and liquid flow rate. We have written the final NESHAP to explicitly state that alternative monitoring procedures are allowed under the procedures described in 40 CFR 63.8(f). However, we do not delegate that authority.

The proposed NESHAP stated that you must install, operate, and maintain COMS as required by 40 CFR part 63, subpart A, General Provisions, and according to PS-1 in Appendix B to 40 CFR part 60. We have stated in the rule that COMS installed, relocated, or substantially refurbished after February 6, 2001, must meet the requirements of PS-1 as revised on August 10, 2000. Any COMS installed on or before February 6, 2001, should continue to meet the requirements in effect at the

time of installation unless specifically required by the local regulatory agency to re-certify the COMS in question.

In the proposed NESHAP, we required you to monitor the performance of FF with either a COMS or a PM detector. In the final NESHAP, we are allowing existing facilities to monitor FF performance using daily EPA Method 9, in Appendix A to 40 CFR part 60, visible emission readings if the facility has a positive pressure FF with multiple stacks, or if it is infeasible to install a COMS in accordance with PS-1 in Appendix B to 40 CFR part 60.

In the proposed NESHAP, we allowed three alternatives for monitoring ESP performance. These were a COMS, a PM detector, or monitoring ESP voltage and current. In the final NESHAP, we are allowing only two alternatives, a COMS or a PM detector. There are no requirements to establish ESP voltage and current operating limits.

In the proposed NESHAP, we specified that EPA Method 9 in Appendix A to 40 CFR part 60 should be used to determine opacity from fugitive emissions. We have retained this requirement in the final NESHAP, but we have added additional requirements on how EPA method 9 in Appendix A to 40 CFR part 60 should be implemented to determine fugitive visible emissions. This language was taken directly from 40 CFR 60.675(c)(1).

In the proposed NESHAP, § 63.7120(b) could be interpreted to imply that PSH operations must be continuously monitored. In the final NESHAP, PSH operations are subject to monthly (not continuous) visible emission testing.

In the proposed NESHAP, we required that lime kiln emission testing be conducted at the highest production level reasonably expected to occur. In the final NESHAP, we require that lime kilns be tested under representative operating conditions.

In the proposed NESHAP, we required reporting of deviations from operating, visible emissions, and opacity limits, including those deviations that occur during periods of startup, shutdown, or malfunction. In the final NESHAP, we require that reports are to be made in accordance with 40 CFR 63.10(d).

In the proposed NESHAP, we required testing of all kilns in order to claim area source status. In the final NESHAP, we have included a provision that allows the permitting authority to determine if idled kilns must be tested, and also to determine whether all kilns that use identical feed materials, fuels, and emission controls must still all be tested.

In the proposed NESHAP, the raw material storage bin was the first emission unit in the sequence of lime manufacturing that was part of the affected source. Materials processing operations between the storage bin and the kiln were also covered. In the final NESHAP, material stockpiles prior to the processed stone storage bin are not covered, open processed stone piles are not covered, storage bins are defined as manmade enclosures, and use the term processed stone handling operations instead of materials processing operations.

In the proposed NESHAP, we included as an affected source lime kilns that produced lime product from any calcareous substance. In the final NESHAP, we have excluded lime kilns that produce lime from water softening sludge that contain calcium carbonate.

In the proposed NESHAP, we excluded materials handling operations associated with lime product. In the final NESHAP, we have specifically stated that nuisance dust collectors are part of lime product handling systems and, therefore, are not part of the affected source.

In the proposed NESHAP, we required that facilities use rolling 3-hour averages to show compliance with wet scrubber operating limits. We noted that in the proposed rule, we did not clearly state how to calculate the rolling average. Based on compliance requirements of other NESHAP, we determined that a rolling average was not necessary to ensure compliance, but did increase the complexity of the average calculation and recordkeeping process. Therefore, in the final NESHAP, we require block 3-hour averages instead of rolling 3-hour averages, which is consistent with the requirement to use block averaging required for ESP that choose to monitor using COM.

In the proposed NESHAP, we allowed averaging among all lime kilns and coolers at existing sources, and all new lime kilns and coolers at new sources, but did not allow averaging of existing and new lime kilns and coolers together. In addition, the averaging provisions and equations applied whether or not the facility desired to average. We have written the final NESHAP to state that each individual new lime kiln and its associated cooler must meet a 0.10 lb/tsf PM emission limit, and each individual existing lime kilns and its associated cooler must meet a 0.12 lb/tsf PM emission limit. Averaging is optional, so that if each individual kiln meets its emission limit, averaging is not required. The exception to this is for existing kilns which are subject to the

0.60 lb/tsf PM emission limit. These kilns are not eligible for averaging.

If the lime manufacturing plant has multiple kilns and wants to average kilns together to meet the PM emission limit, this is allowed (with one limitation discussed below, and the exception for kilns subject to the 0.60 lb/tsf PM emission limit noted above) and the averaging equations in the final rule must be used. However, in no case may a new kiln exceed a 0.10 lb/tsf emission limit. Where there are both new and existing lime kilns at a facility, then the PM emission limit will be an average of the existing and new kiln PM emissions limits, weighted by the annual actual production rates of the individual kilns. We believe that allowing averaging is appropriate here because of the identity of the units (kilns and coolers in all cases), and the emissions (same HAP in same type of emissions, since all emissions result from kilns and coolers). Averaged emissions under these circumstances would, thus, still reflect MACT for the affected source. The averaging provisions are included in the final NESHAP as a result of the recommendations of the Small Business Advocacy Panel convened as required by section 609(b) of the Regulatory Flexibility Act (RFA) and improves the compliance flexibility options for small businesses, which is the intent of the RFA.

The only limitation we are requiring on averaging is that any new kiln, when considered alone, must meet the 0.10 lb/tsf emission limit. We do not consider this to be a significant limitation because the most likely averaging scenario involving new and existing kilns will be a facility that erects a new kiln that is designed to meet a level below the 0.10 lb/tsf emission limit. It is also appropriate to prevent a situation where a new kiln could be erected that did not perform at the same level as the best controlled facility.

We are not allowing kilns equipped with wet scrubbers for PM emissions control to be eligible for averaging. As explained more fully below, we are establishing a separate PM emissions standard for kilns equipped with wet scrubbers to avoid potentially forcing

wet scrubbers to be replaced with dry systems, which could lead to less control of SO₂ emissions and atmospheric formation of sulfate PM (a type of PM2.5). These considerations, however, do not justify allowing averaging between kilns with such large differences in PM emission limits. Our intent in allowing averaging was to avoid the situation where some kilns at a facility were slightly above the 0.12 lb/tsf emission limit would have to completely replace existing PM controls for only a slight reduction on overall PM emissions. If we were to allow averaging where some of the kilns only have to meet a 0.60 lb/tsf emission limit, it could result in some kilns being allowed to emit PM at levels significantly above the levels that have been determined to be best control.

We are not allowing averaging for other emission sources. Processed stone handling operations that exhaust through stacks have an emission limit of 0.50 g/dscm. We did not see an advantage to allowing averaging for these operations because they are small compared to the PM emissions for the lime kilns. The other emission limits in the final rule are for PSH operations, and the limits are expressed as opacity. As stated previously, averaging opacity limits is not appropriate. No commenter requested averaging for PSH operations.

In the proposed rule, we defined the affected source as the collection of all of the lime kilns, lime coolers and materials processing operations. We noted that this language could be misinterpreted to imply that a new lime kiln erected at an existing lime manufacturing plant would be considered existing, not new. In the final NESHAP, we have written the language in 40 CFR 63.7082 to make our intent clear. New lime kilns, whether or not they are built at an existing lime manufacturing plant, must meet the PM emission limits for new sources.

IV. Summary of Environmental, Energy and Economic Impacts

We considered water, solid waste, and energy impacts as part of our so-called beyond-the-floor analysis pursuant to section 112(d)(2) of the CAA, which requires consideration of "non-air

quality health and environmental impacts and energy requirements," as well as "the cost of achieving such emissions reduction," in deciding whether or not to adopt standards more stringent than the MACT floor. The following section summarize portions of these analyses.

A. How Many Facilities Are Subject to the Final NESHAP?

There are approximately 110 lime manufacturing plants in the U.S., not including lime production facilities at pulp and paper mills. About 30 of these 110 plants are located at beet sugar manufacturing facilities which are not subject to the final rule. We estimate that 70 percent of the remaining 80 lime manufacturing plants will be major sources co-located with major sources, or part of major sources, and, thus, about 56 lime manufacturing plants will be subject to the final rule. The other 24 facilities will incur a small, one-time cost for HCl testing to demonstrate that they are area sources.

B. What Are the Air Quality Impacts?

We estimate that all sources (not including lime manufacturing plants at beet sugar factories) in the lime manufacturing source category collectively emit approximately 10,720 tpy of HAP. These HAP estimates include emissions of HCl and HAP metals from existing sources and projected new sources over the next 5 years. We estimate that the final NESHAP will reduce HAP metals emissions from the lime manufacturing source category by about 3.6 tpy, and will reduce HCl emissions by about 235 tpy. In addition, we estimate that the final NESHAP will reduce PM emissions by about 3,880 tpy from a baseline level of 16,730 tpy, and the final NESHAP will reduce SO₂ emissions by about 6,150 tpy from a baseline of 34,650 tpy. The roughly 14 percent decrease in HCl and SO₂ emissions is the projected result of uncontrolled sources installing baghouses to comply with the final PM standards.

Table 1 to this preamble summarizes the baseline emissions and emissions reductions.

TABLE 1.—TOTAL NATIONAL BASELINE EMISSIONS AND EMISSIONS REDUCTIONS FOR BOTH NEW AND EXISTING LIME MANUFACTURING PLANTS

Emissions	PM (tpy)	HAP metals (tpy)	HCl (tpy)	SO ₂ (tpy)
Baseline emissions—existing sources	13,588	13.5	8,541	30,783
Baseline emissions—new sources	3,140	2.8	2,161	3,868

TABLE 1.—TOTAL NATIONAL BASELINE EMISSIONS AND EMISSIONS REDUCTIONS FOR BOTH NEW AND EXISTING LIME MANUFACTURING PLANTS—Continued

Emissions	PM (tpy)	HAP metals (tpy)	HCl (tpy)	SO ₂ (tpy)
Total baseline emissions	16,728	16.3	10,702	34,651
Emissions reductions—existing sources	3,786	3.4	235	6,147
Emissions reductions—new sources	96	0.2	0	0
Total emissions reductions	3,882	3.6	235	6,147

The final NESHAP will also result in some offsetting emissions increases. These increases are due to additional emissions that will occur at electricity generating facilities as a result of the need to generate the electricity required to operate the control equipment, and power the fans necessary to overcome control device pressure drop. We estimate these emission increases to be 0.3 tpy for PM, 12.4 tpy for sulfur dioxide (SO₂), and 6.1 tpy for nitrogen oxides (NO_x). It should be noted that these emissions increases are insignificant when compared to the emissions decreases that result from the final NESHAP.

C. What Are the Water Impacts?

We expect overall water consumption for existing sources to increase by about 1,250 million gallons per year from current levels as a result of the final rule. This estimate is based on the assumption that sources will upgrade or replace about 30 percent of the existing wet scrubbers to comply with the PM standards, and these new or upgraded scrubbers will require a higher water flow rate than the scrubbers currently installed. For new sources, we expect no additional water consumption, as we do not expect new sources to install wet scrubbers for PM control.

D. What Are the Solid Waste Impacts?

As a result of the final rule, solid waste will be generated as additional PM is collected in complying with the PM standards. We estimate that about 3,880 tpy of additional solid waste will be generated as a result of today's final rule. This estimate does not include consideration that some of this will most likely be recycled directly to the lime kiln as feedstock or sold as byproduct material (agricultural lime).

E. What Are the Energy Impacts?

We expect electricity demand from existing sources to increase by about 4.0 million kilowatt-hours/yr (kWh/yr) as a result of the final rule. This estimate is based on the assumption that sources will replace existing wet scrubbers with

new, more efficient venturi wet scrubbers (that require more electricity). For new sources, we expect an increase in electricity usage of about 0.1 million kWh/yr as a result of the final rule. This electricity demand is associated with complying with the PM standards for new sources.

F. What Are the Cost Impacts?

The estimated total national capital cost of today's final rule is \$28.2 million. This capital cost applies to projected new and existing sources and includes the cost to purchase and install emissions control equipment (e.g., existing PM control equipment upgrades); monitoring equipment; the costs of initial performance tests; and emissions tests to measure HCl to determine whether a source is a major source, and, hence subject to the final standards.

The estimated annualized costs of the final NESHAP are \$18.0 million. The annualized costs account for the annualized capital costs of the control and monitoring equipment, operation and maintenance costs, periodic monitoring of materials handling operations, and annualized costs of the initial emissions testing.

G. What Are the Economic Impacts?

It should be noted that the economic impacts and social costs described below slightly overestimate the impacts for today's action, for they reflect the higher cost estimates (\$22.4 million annualized costs) associated with the proposed rule.

The results of our economic impact analysis indicate the average price per ton for lime will increase by 2.1 percent (or \$1.17 per metric ton) as a result of the final standards for lime manufacturers. Overall lime production is projected to decrease by 1.8 percent as a result of the final standards. Because of the uncertainty of control cost information for large firms, we accounted for these firms as a single aggregate firm in the economic model, so it is not plausible to estimate closures for large firms. However, among the 19

small firms in this industry, we project that two firms are at risk for closure.

Based on the market analysis, we project the annual social costs of the final rule to be \$20.2 million. As a result of higher prices and lower consumption levels, we project the consumers of lime (both domestic and foreign) will lose \$19.7 million annually, while domestic producer surplus will decline by \$0.8 million. Foreign producers will gain as a result of the final rule with profit increasing by \$0.2 million. For more information regarding the economic impacts, consult the economic impact analysis in the docket for the final rule.

V. Responses to Major Comments

This section presents a summary of responses to major comments. A summary of all comments received and our responses to those comments may be found in Docket ID No. OAR 2002-0052.

Comment: In the preamble to the proposed rule, EPA requested comment on establishing a subcategory for existing kilns equipped with wet scrubbers, if it could be demonstrated factually that there will otherwise be significant environmentally counterproductive effects due to increased emissions of acid gases, increased energy use, or increased water use. Several commenters asked that a subcategory for scrubber-equipped kilns be established since wet scrubbers cannot meet the proposed PM emission limit of 0.12 lb/tsf for existing affected kilns and, therefore, existing kilns with scrubbers will have to replace them with baghouses. They also asserted that in most cases, wet scrubbers have higher annualized costs than baghouses. Therefore, even if a wet scrubber could meet a PM emission limit of 0.12 lb/tsf, facilities will opt to use baghouses due to cost considerations. This will result in an increase in emissions of HCl (a HAP) and SO₂ (a non-HAP criteria pollutant) for a nominal decrease in HAP metal emissions. In later discussions, this same commenter (the industry trade association) pointed out that SO₂ can undergo chemical reactions

in the atmosphere to form sulfate PM, which is a type of PM which is less than 2.5 micrometers in diameter (fine PM). In support of this request, one commenter provided estimates that not establishing the requested wet scrubber subcategory will result in a HAP metals emissions decrease of 3 tpy nationwide, but will result in increased emissions of 2,220 tpy for HCl and 2,475 tpy for SO₂. They also provided data indicating that 46 percent of the increased SO₂ emissions would react to form fine PM in the form of sulfates. They estimate that this would result in an increase of 1,645 tpy of fine PM emissions. Other commenters provided site-specific examples they claimed demonstrated the same effect. One commenter also claimed that the higher operating temperatures of dry systems cause metals to vaporize and pass through a particulate collector, resulting in a lower metal concentration in the captured particulate. As a result, they claimed that even though dry control equipment may reduce HAP metals emissions, the reduction will be minimal, while the release of HCl and SO₂ emissions will increase significantly. The commenter provided data which they claimed show the only conventional pollutant that will be reduced with the installation of a dry control system will be PM and, "fugitive dust emissions from a dry system could more than offset the improved particulate collection on the kiln exhausts."

Response: Standards implementing section 112(d) of the CAA must, of course, be of a minimum level of stringency, usually referred to as the MACT floor. For existing sources, this floor level of control cannot be less stringent than "the average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information)." In the final rule, EPA is establishing section 112(d) standards to control emissions of HAP metals, for which PM is a surrogate. None of the commenters challenged that the level of PM emissions reflecting the average of the 12 percent of the best performing sources (for HAP metals reduction) is 0.12 lb/tsf. Notwithstanding, the commenters contended that EPA should subcategorize on the basis of the type of air pollution control device used and then separately determine the floor for each subcategory.

Although the CAA contemplates that EPA may establish subcategories when promulgating MACT standards, subcategorization typically reflects "differences in manufacturing process,

emission characteristics, or technical feasibility" (67 FR 78058). A classic example, provided in the legislative history to CAA section 112(d), is of a different process leading to different emissions and different types of control strategies, the specific example being Soderberg and prebaked anode primary aluminum processes (see *A Legislative History of the Clean Air Act Amendments of 1990*, vol. 1 at 1138-39 (floor debates on Conference Report)).

Normally, it is legally impermissible to subcategorize based on the type of air pollution control device. See *Chemicals Manufacturers Association v. EPA*, 870 F. 2d 177, 218-19 (5th Cir. 1989) modified on different grounds on rehearing 884 F. 2d 253 (5th Cir. 1989) (rejecting subcategorization based on type of control device for purposes of the technology-based standards under the Clean Water Act, which are analogous to the CAA section 112 standards). The problem with subcategorizing on the basis of pollution control device, quite simply, is that it leads to situations where floors are established based on performance of sources that are not the best performing. For example, suppose a source category consists of 100 sources using the same process and having the same emission characteristics, but that 50 sources use control device A to control HAP emissions, and 50 use control device B which is two orders of magnitude less efficient. If one subcategorized based on the type of pollution control device, the MACT floor for the 50 sources with control device B would reflect worst, rather than best performance. Although the disparity in levels of emission control between the best-performing sources here, and the best-performing sources using wet scrubbers is not this dramatic, the difference is nonetheless evident.

Commenters provided no technical data that would justify subcategorizing. Nor are we aware of any. The commenters maintain instead that the best performing sources with respect to HAP metal reduction should not be considered "best performing" because that performance (achieved by use of FF) comes at an environmental cost, namely increased emissions of HCl and SO₂ compared to what lime kilns equipped with wet scrubbers will emit. There is some support for the idea that if an ostensibly best-performing pollution control device creates potentially significant and counterproductive environmental effects, its performance need no longer be considered best due to the counterproductive effects and could justify differentiation in the form of

separate standards. Commenters suggested that the increased emissions of HCl and SO₂ will inevitably result (they maintain) if the owners of lime kilns replace wet scrubbers with baghouses. (The commenters did not suggest, however, that kilns with FF should replace them with a different type of control system to avoid these impacts; they sought the result of separate standards for FF-equipped kilns and wet system-equipped kilns.)

Although it is not clear that the commenters' starting premise, that baghouses are either needed or will be used to achieve the PM standard, is invariably correct (see Response to Comment Document where EPA responds to comments regarding the performance capabilities of venturi wet scrubber systems), EPA estimated at proposal and continues to estimate that at least in some cases, kilns would replace wet scrubbers with dry systems (for example, where it is more economical to do so).

The commenters provided no data to refute that a PM emission limit of a 0.12 lb/tsf represents best control of HAP emissions if we do not create any kiln subcategories. (We note that as part of their comments, they claimed that the higher temperatures of dry PM controls result in metals vaporizing and passing through the PM control. However, the data provided in their comment do not substantiate that claim, and studies done for the Hazardous Waste Combustor NESHAP indicate that all but a few percent of the metals in question exit the kilns as solid particulate.) However, our analysis indicates that the extent to which SO₂ and HCl emissions actually increase may have been overstated by the commenter. The EPA estimates that if all facilities currently using wet scrubbers switched to dry controls, HCl emissions would increase by approximately 1,310 tpy (vs. 1,800 tpy estimated by the commenter), and SO₂ emissions would increase by about 1,830 tpy (vs 2,900 tpy estimated by the commenter). (See the memorandum "Environmental Impacts of Decision on Best Control for Wet Scrubber-Controlled Kilns" in the docket for the final rule.) We do not regard either level of increased HCl emissions as significant. We modeled this emission increase as part of our determination (pursuant to CAA section 112(d)(4)) that emissions of HCl from lime kilns are below an HCl risk threshold within an ample margin of safety. See 67 FR 78054-78057 and the risk analysis in the docket for the final rule. Given this determination, we cannot view these HCl increases as being so significant as

to raise a question whether the best-performing sources with respect to HAP metal reductions are in fact best performing.

The commenters also cited projected increases in the criteria pollutant SO₂. They did not initially address the reductions in PM emissions resulting from the decision not to subcategorize by control device. The EPA estimates that nearly 1,080 tpy of additional PM is removed if all existing kilns were to meet a standard of 0.12 lb/tsf, of which approximately 1.6 tpy are metal HAP. Although EPA may not promulgate standards for non-HAP under CAA section 112(d), Congress expected reductions in emissions of criteria pollutants such as PM to be a benefit of the MACT program. In comparison to estimates of increased emissions of SO₂ and HCl by either the commenter or EPA, the decrease in captured PM emissions (and the attendant decrease in capture of non-mercury metal HAP) is significant.

There is a further consideration, however. Based on the available size distribution data from Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, 73 percent of the PM emitted directly by lime kilns is coarse PM (PM in the size range of 10 to 2.5 micrometers). Some of the SO₂ emitted to the atmosphere undergoes chemical reactions to form fine PM. (See generally the respective Criteria Documents for PM (EPA/600/P-95/001aF-cF. 3v, 1996) and SO₂ (EPA/600/8-82-029aF-cF. 3v., 1982 and addenda)). Thus, in assessing whether some potential factor might justify a decision that kilns with dry systems are not best performing, some comparison of coarse v. fine PM emissions here is needed.

If we retain a single PM emission limit of 0.12 lb/tsf for all existing kilns, total PM emissions would be reduced (compared to separate standards for kilns with wet scrubbers and dry controls) by an additional 1,080 tpy. Of that number, 630 tpy is fine PM and 450 is coarse PM. The potential amount of increased SO₂ emissions is 1,830. A portion of this 1,830 tpy of SO₂ will be converted in the atmosphere to produce 1,270 tpy of fine PM. Therefore, the incremental impact of a single PM standard of 0.12 lb/tsf for both wet scrubbers and dry controls would be an increase of 640 (1,270-630) tpy in fine PM emissions, and a decrease of 450 tpy in coarse PM emissions. This assumes that all facilities that currently have wet scrubbers switch to dry controls, and that 46 percent of the SO₂ converts to fine PM. The 46 percent conversion estimate used by the commenter is

consistent with information in the respective Criteria Documents for PM and SO₂ discussed above.

As recently summarized by EPA (68 FR 28339, May 23, 2003), scientific studies show ambient PM (both fine and coarse) is associated with a series of adverse health effects. Fine PM is associated with increases in daily mortality. Coarse PM is more strongly linked to morbidity (e.g. hospital admissions). See generally the respective Criteria Documents for PM (EPA/600/P-95/001aF-cF. 3v, 1996) and SO₂ (EPA/600/8-82-029aF-cF. 3v., 1982 and addenda). Therefore, it is difficult to make comparisons between the relative benefits of reducing emissions of fine and coarse PM.

The EPA views this situation as equivocal: It is unclear which of these types of performance is best since on the one hand there is reduced emissions of HAP metals and coarse PM but foregone control of SO₂ and sulfate (fine) PM, and, for kilns controlled with wet systems, the converse. In this situation, and based on these facts, which, with current analytic tools seem to us to be largely in equipoise, we are not prepared to view either wet or dry systems as best performing and instead are promulgating a separate PM standard for each.

The EPA emphasizes that considerations of risk and relative environmental benefits are normally irrelevant to MACT floor determinations (unless expressly authorized by statute, as in CAA section 112(d)(4) as applied in the final rule), since floor standards must reflect the performance of the specified number of designated sources. See *National Lime Ass'n v. EPA*, 233 F. 3d at 640 (considerations of cost and *de minimis* risk cannot be considered in making MACT floor determinations). We are considering these factors in the final rule solely for the purpose of evaluating the commenters' claim that sources using wet and dry control systems should be evaluated separately for MACT floor purposes due to environmental benefits and disbenefits associated with dry and dry control systems.

Comment: One commenter stated that wet scrubbers cannot meet the proposed PM emission limit of 0.12 lb/tsf. They claimed that a wet scrubber manufacturer will only guarantee this limit if less than 1 percent of the particles to be removed are less than 1 micrometer in diameter. The commenter stated that EPA assumes that the average mass diameter of particles in lime kiln gas effluent is 2 micrometers, and that this assumption is based on a single reference, and that reference was

actually fugitive lime dust, not lime kiln particulate. They further claimed that volatilization and homogenous nucleation of potassium chloride particles in the gas stream generates particles in the 0.1 to 0.5 micrometers size range. "As particle size decreases below 1 micrometer, inertial compaction becomes decreasingly effective. Above 0.1 micrometers, Brownian displacement is ineffective. In the range between 0.1 and 0.5 micrometers, neither of these two main particle capture mechanisms relied upon in wet scrubber design is very effective." The commenter presented data from a recent scrubber installation to demonstrate the point.

A second commenter claimed that a scrubber performance efficiency of 99.9 percent will be required to meet the 0.0072 grain/dry standard cubic foot (gr/dscf) particulate concentration which they claimed corresponds to the proposed PM emission limit of 0.12 lb/tsf. The commenter's environmental consultant advised that it is unlikely a wet scrubber with a 35-inch pressure drop could achieve this level of performance with the facility's current inlet exhaust particulate loading.

Response: We have serious technical disagreements with this comment, as set out in the Response to Comment Background Document. However, because EPA feels that some kilns with wet systems would replace them with dry systems to comply with a PM emission limit of 0.12 lb/tsf, the potential tradeoff between coarse PM/HAP metals and fine PM/SO₂ reductions likely will still occur.

Comment: One commenter contended that EPA asserts incorrectly that lime plants will choose high-efficiency venturi scrubbers to replace their current wet scrubbers because high-efficiency venturi scrubbers have lower capital costs and sometimes lower annual costs than FF. They further stated that five of the six model kilns the Agency examined had much higher annualized costs for high-efficiency venturi scrubbers than for FF. This commenter submitted a manufacturer's cost proposal that shows a scrubber with a 35-inch pressure drop costs substantially more than EPA estimates. They conclude from this that lime kilns will be forced to use FF, with attendant increases in HCl and SO₂ emissions. Another commenter stated that the cost for the installation of a FF will be higher than EPA estimated due to the location of existing equipment in the area where the collector should be located, construction of the duct collector in a congested area with plant operations,

and accessibility to existing lime kiln dust handling systems.

Response: Regarding modeled high costs for scrubbers compared to FF, individual models may show this characteristic. However, the distribution of kiln sizes in the lime industry and the allocation of model plants to those kilns shows that estimated nationwide total annual costs for replacing existing wet scrubbers with high-efficiency venturi scrubbers is \$6.6 million. The total annual cost if the existing wet scrubbers are replaced with FF is \$7.0 million. So there is essentially no cost difference on a nationwide basis.

For both types of control system, costs for any specific plant may be more or less than the value shown by the model used to estimate nationwide cost. The plant is expected to buy whatever system its management believes is in the best business interests of the owners, but in the aggregate, estimated annual cost for control systems is about the same whether all plants replace existing equipment with venturi scrubbers or with FF. It is for this reason that EPA is finding that at least some kilns would replace wet systems with dry if required to meet a uniform PM limit of 0.12 lb/ tsf.

There were two comments where specific facilities claimed that their costs will be higher than EPA estimated in our model plant analysis. One was a vendor's actual cost proposal for a scrubber with 35-inch w.g. pressure drop, and one was for installation of a FF. Our costs are based on model plants developed from industry responses to questionnaires. Given that we do not have site specific information on every facility, this is a reasonable approach to calculating costs. It is always possible that there are site specific factors that will result in any one facility having higher or lower costs than costs estimated using model plants. Our methodology is based on estimates of basic equipment costs, and factors to calculate direct and indirect capital costs that constitute total capital investment. Unit costs are applied to labor, utilities, waste disposal, and other operating and maintenance costs to obtain direct annual costs. Indirect annualized costs based on capital recovery and other service charges are also estimated and added to direct annual costs to obtain total annual cost. Costing based on a model plant gives an estimate that can be included in an aggregate estimation of costs across all model plants weighted by their representation in the nationwide population. This approach necessarily will not address each specific case found in industry. Therefore, one

facility's reported costs not corresponding to our model plant costs does not indicate that our costs are underestimated. We also note that, except for a comment on flue gas flow which we previously addressed, the commenters did not take exception to the basic equipment costs, energy costs, or cost factors used by us in our model plant assessment of the rule's cost analysis as proposed.

One commenter also mentioned the cost resulting from the location of existing equipment and plant congestion. We have accounted for these costs by including factors for demolition and salvage of existing equipment that will have to be replaced by the new control system. A retrofit factor is also included to account for difficulties in replacing existing equipment with new equipment in an existing plant (see "Costing Algorithm for Venturi Scrubber on Lime Kilns with Existing Scrubbers").

Comment: Several commenters claimed that not establishing a subcategory for scrubber-equipped kilns will adversely affect small businesses. They stated that the annualized cost of upgrading all scrubbers is \$9.45 million, based on EPA's estimate of total annualized costs. According to the commenter, EPA predicts that upgrading these kilns will reduce HAP metals by 3.1 tpy, resulting in a cost effectiveness of \$3.0 million/ton of metal HAP. The commenter stated that EPA's assumption that 30 percent of lime plants are area sources and won't be affected by the final rule reduces the removal of metal HAP attributed to upgrading scrubber-equipped kilns to 2.2 tpy (although the commenter stated that EPA has provided no support for the assumption that 30 percent of lime plants are area sources).

Another commenter noted that EPA's estimated annualized cost for the commenter to install FF is \$2,236,000, which equates to \$9.3 million per ton of particulate HAP control.

Response: Section 112 of the CAA precludes us from considering cost when calculating MACT floors. Therefore, none of the cost issues discussed above are sufficient to support a separate subcategory for existing kilns with wet scrubbers, or otherwise support a different standard.

Though costs cannot be a consideration here, our estimate shows a cost of \$6.6 million to upgrade all scrubbers to meet the rule as proposed, versus the \$9.45 million figure provided by the commenter. Our estimate assumed 70 percent of kilns are located at major sources, and 90 percent of scrubbers would require an upgrade.

This was probably an overly conservative way to estimate costs. In reality, it is reasonable to assume that, on average, the existing scrubbers have only 50 percent of their useful life remaining. Because we allocated all of the capital cost of a new scrubber to the rule, our costs are conservative.

However, we have written the final rule to allow separate PM emission limits for kilns with wet versus dry controls. Therefore, the premise of the comment, that not subcategorizing by control device will adversely affect small business, is now moot. In the final costs, we estimate that only 30 percent of existing wet scrubbers will require upgrade or replacement. As noted previously, because we are allocating all the capital replacement cost to the final rule, our costs are still conservative.

Comment: One commenter objected to EPA's rationale of using PM as a surrogate for controlling toxic metals emissions. The commenter stated that if EPA has sufficient data to indicate that toxic emissions from lime kilns are an ambient air problem, then the regulation should focus on reducing gaseous emissions such as HCl.

Response: By limiting emissions of PM, the final rule will reduce emissions of non-volatile and semi-volatile metal HAP, which are a subset of PM, and are necessarily removed when PM is removed by air pollution control equipment. As stated in the preamble to the proposed rule, air pollution controls for HAP metals are the same as the PM controls used by the lime manufacturing industry, *i.e.*, FF, ESP, and wet scrubbers. These controls capture non-volatile and semi-volatile metal HAP non-preferentially along with other PM, thus making PM an acceptable indicator of these HAP metals. Particulate matter control technology, thus, indiscriminately captures HAP metals along with other particulate. Consequently, it is an appropriate indicator when the technical basis of the standard is performance of back-end particulate control technology.

Another reason for using a surrogate is the lower cost of emissions testing and monitoring for PM as compared to the cost of emissions testing and monitoring for multiple metal HAP that will be required to demonstrate compliance. Because PM control devices control metal HAP to the same efficiency and because of the associated cost savings associated with emissions testing and monitoring, the Agency has promulgated several other NESHAP where PM is a surrogate for non-volatile and semi-volatile metal HAP.

Regarding the commenter's second point concerning regulating emission of

HCl, the preamble to the proposed rule explained in detail the Agency's decision not to regulate HCl emissions from lime kilns. To summarize that discussion, the EPA determined that, under the authority of section 112(d)(4) of the CAA, no further control was necessary because HCl is a threshold pollutant, and HCl levels emitted from lime kilns are below the threshold value within an ample margin of safety to humans and to the environment, and considering the possibility that facilities that currently have wet scrubbers for PM emissions control may switch to dry PM controls. (The CAA section 112(d)(4) analysis also considered the potential for environmental harm posed by HCl emissions from these sources.)

Comment: One commenter stated that the PM emission limit for new lime kilns should be 0.12 lb/tsf, the same as the emission limit for existing kilns. The commenter noted that the proposed limit is based on two 3-hour test runs at one plant. According to the commenter, EPA recognized in the proposal preamble that 3-hour test results are just a snapshot in time and should not be used as the basis for establishing an enforceable standard, and that EPA expressly rejected such an approach when establishing the MACT floor for existing kilns. The commenter stated that data in the docket shows that 0.10 lb/tsf is not continuously achievable by lime kilns, and EPA should not establish a separate PM limit for new lime kilns.

Another commenter stated 0.10 lbs PM/ton stone feed for a new kiln is too restrictive, and EPA does not have adequate data to determine that a FF or scrubber-equipped kiln could achieve this low level of emissions on a sustained basis.

Response: The approach to which the commenter refers whereby EPA rejected the use of the "average or mean" in establishing the MACT floor for existing sources did not refer to the average of individual test runs as implied by the comment. Rather, it refers to EPA's decision to use the median (instead of a simple mean) of the top-performing 12 percent to set the MACT floor. Furthermore, as an indication of the achievability of the technology over the long term, EPA chose to rely on State-imposed permit limits (in conjunction with emissions test data showing that those permit limits are representative of actual performance) in arriving at the MACT floor emission limit.

In test data cited by the commenter, the three-run averages for two sets of emissions tests for the kiln used to set the MACT new PM limit are below (0.079 and 0.091 lb/tsf) the proposed

PM limit of 0.1 lb/tsf for new lime kilns. The commenter noted that one of the test runs was at the proposed 0.1 lb/tsf PM limit and that the proposed 0.1 lb/tsf limit was, therefore, inappropriate.

It is reasonable for EPA to establish a standard based on the same methodology that will be used for complying with that standard. See, e.g., *Chemical Waste Management v. EPA*, 976 F. 2d 2, 34 (D.C. Cir. 1992). We note that compliance with emission limits is normally based on a three-run average which can accommodate occasional elevated results as long as the average is at or below the established limit. Furthermore, the emission test results for five of the six top performing kilns were 0.0091, 0.013, 0.026, 0.027, and 0.091 lb/tsf. These results adequately account for operating variability and indicate that any new kiln using well designed and operated control devices can meet the 0.1 lb/tsf limit. Based on this, we see no basis to state that a 0.10 lb/tsf PM emission limit is not achievable or appropriate.

Comment: One commenter claimed that the proposed NESHAP will require the replacement of their two wet scrubbers with baghouses. They claim there is no space for FF retrofit, and that converting to baghouses will trigger prevention of significant deterioration (PSD) nonattainment review due to increased SO₂ emissions.

Response: While we recognize that a facility may (or may not) have site-specific space restrictions, we have, on average, adequately accounted for these factors by incorporating cost analysis factors to account for retrofit and equipment demolition. We have also allowed a facility 3 years to comply with the final NESHAP. This should allow sufficient time for facilities to replace or upgrade existing equipment during scheduled outages. The averaging provisions in the final NESHAP also provide facilities with additional flexibility concerning replacement or upgrade of existing equipment.

Requiring an existing facility with a wet scrubber to upgrade their PM controls to meet 0.12 lb/tsf will not necessarily trigger new source review (NSR). First, as previously discussed, the facility can choose to replace or upgrade their existing scrubbers, which means there will be no SO₂ (or other collateral pollutant) emissions increase to trigger NSR requirements. Second, if they choose to use a baghouse, they may be able to avoid NSR by qualifying for a pollution control project exclusion (67 FR 80186).

Comment: One commenter stated the particulate matter emission limits

proposed for lime manufacturing kilns and coolers do not represent the maximum achievable control technology and are much less stringent than the limits actually required by the CAA. The commenter noted that the proposed rule discredits performance test data which demonstrate that particulate emissions of less than half the proposed standard for existing plants are routinely achieved by claiming they may not be consistently achievable, but EPA has provided no statistics. The commenter claimed that EPA has chosen instead to base the standards on permit limits, but has selectively eliminated from consideration those permits calling for stringent controls which are currently in place. The commenter gives the examples of Continental Lime which is in compliance with a best available control technology (BACT) limit for PM emissions of 0.05 lb/ton limestone, and Western Lime which is in compliance with a permit limit for PM emissions of 0.06 lb/ton limestone.

The commenter noted that if performance data do not represent achievable emission limits, EPA should consider design standards based on air-to-cloth ratios. The commenter also stated the proposed particulate emission limits for grinders, conveyors, and bins are also based on data which overstate emissions (in nearly all cases) and do not represent MACT. The commenter stated EPA should examine actual performance test data test or actual permit limitations.

Response: The EPA reviewed data on the kilns referred to in the comment. The permit limits cited by the commenter were apparently reported on the EPA Technology Transfer Network (TTN) website. The EPA contacted the Montana Department of Environment and found that the limit for one of these kilns is actually 0.5 lb/tsf and not 0.05 lb/tsf as reported on the TTN website. Also, the complete permit for the other kiln mentioned was located on the Wisconsin Department of Natural Resources website, which showed the permit limit for the kiln in question as being 0.12 lb/tsf rather than the 0.058 lb/tsf as reported on the TTN website. Based on the correct PM permit limits for these two lime sources, EPA's conclusions regarding MACT PM limits for existing and new sources are still appropriate. As the response to the previous question shows, these permit limits are also representative of actual performance.

The floor for grinders, conveyors, and bins is based on the existing new source performance standards (NSPS). We have no data to support a different floor.

Comment: One commenter stated that opacity does not correlate to PM mass emissions. The commenter noted the EPA has stated on several occasions that a COMS can determine opacity, but a COMS cannot determine PM emissions. And if particle density changes but the particle size remains the same, opacity will not change while the mass emission rate will change in proportion to the density change. The commenter agreed that PM is a technically sound surrogate for HAP metals, but disagreed that opacity serves as a surrogate for HAP metals as stated in the proposal preamble.

The commenter stated that a COMS can not be used to evaluate the continuous compliance status of kilns, coolers, or PSH operations that have a mass emission limit. The commenter was not aware of any data that show a definitive link between opacity and mass emissions except in very limited and controlled situations. In addition, the commenter did not understand how a 15 percent 6-minute average opacity limit can be correlated to a 3-hour rolling average PM emission limit of lb/ton of stone feed.

The commenter stated a better alternative is to use a PM continuous emissions monitor system (CEMS) that measures PM mass emissions in units that are directly related to the mass emission limit. The commenter noted that EPA's stated reluctance to use a PM CEMS in the absence of performance specifications is inconsistent with the remainder of the standard, since the use of BLDS and a PM detector are proposed without performance specifications. The commenter also noted that an extractive type PM CEMS designed to operate in wet exhaust streams can provide a direct indication of compliance for wet scrubbers.

Response: We agree that a COMS cannot directly measure PM emissions. However, a properly calibrated and maintained COMS is sufficient to demonstrate long term PM control device performance. The purpose of the monitor is to demonstrate with reasonable certainty that the PM control device is operating as well as it did during the PM emission test used to demonstrate compliance.

We also note that PM CEMS are significantly more expensive to purchase and maintain than a COMS or PM detector. Also, PM CEMS measure concentration, while the basis of the standard is mass per unit of feed input. Because the standard is not based on PM concentration, and no PM CEMS are currently installed and operating on the best controlled kilns, we have no data

to develop a PM standard based on the use of PM CEMS.

Comment: Several commenters stated EPA Method 9 in Appendix A to 40 CFR part 60 should be allowed for a positive pressure baghouse. According to one commenter, the bag leak detector guidance document recognizes that requiring BLDS will be very costly, and stated that the document does not apply to this type of baghouse (EPA's "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997, pg 2). This commenter gave the example of a small business that will be required to have a bag leak detector for each of the eight compartments in its baghouse under the final rule, and whose title V permit allows Method 9 monitoring for the baghouse. According to one commenter, the associated costs of installing a separate bag leak detector or PM CEM sensor on each discharge or new common stack could easily exceed \$1,000,000. The commenter noted that, "baghouse pressure differential readings, together with fan amperage and daily visible emission notations will provide the necessary performance assurance with ample and timely indication of baghouse failures or malfunctions."

Response: We acknowledge that there are precedents for the use of alternatives to COMS, BLDS, and PM detectors on positive pressure baghouses that have multiple stacks. The NESHAP for portland cement, an industry that has similarities to the lime manufacturing industry, allows the use of opacity monitoring using Method 9 in Appendix A of 40 CFR part 60 for kilns having control devices with multiple stacks. Based on this analogous situation, we have decided that existing lime kilns controlled by control devices having multiple stacks will have the option of using Method 9 in Appendix A of 40 CFR part 60 for daily opacity monitoring.

Comment: One commenter stated that a single excursion from operating parameters recorded during a 3-hour compliance test should not constitute a violation. The commenter stated that, "the new source performance standard (NSPS) kilns are the lime industry's top performers, and their monitoring regime should be the benchmark against which monitoring under the MACT rule is prescribed." Since a violation under the NSPS does not occur unless the parameter is greater than 30 percent below the rates established during the performance test, the commenter recommends a 30 percent "buffer" between the permit limit and the 3-hour average recorded during the compliance test. Or, "alternatively, like the Pulp and

Paper MACT, the rule should specify that a violation of the standard does not occur unless 6 or more 3-hour average parameter values are recorded outside the established range within the 6 month reporting period."

The commenter noted that EPA's compliance assurance monitoring (CAM) guidance document states, "Use of only 3 hours of parameter data may not be sufficient to fully characterize parameter values during normal operation." The commenter also noted that language in the proposal preamble cautions against developing enforceable emission standards based on 3-hour compliance tests. The commenter also noted that none of the CAM plans for scrubbers base a permit limit on the 3-hour average reading that occurred during a compliance test, and two of the plans allow a 15 percent buffer to account for variability.

The commenter provided gas pressure drop readings and concurrent PM test data for three kilns, and noted that for each of them, gas pressure drop during one or more 1-hour runs was below the proposed 3-hour average. The commenter stated that under the proposed rules, these readings below the 3-hour average would constitute a violation.

The commenter also stated the final rule should provide an exemption from the PM emission limit during performance testing. The commenter stated, "plant operators may need to conduct a series of performance tests to determine the minimum pressure drop and liquid flow rate levels that will assure compliance for each set of operating conditions used for a particular kiln. Results for these tests are not available until post-test laboratory analyses are completed."

Response: Each owner/operator is required to define the compliance parameters to be monitored in their OM&M plan. Then, during the initial performance tests, they are required to monitor and establish the value or range of the parameters. The 30 percent buffers referred to by the commenters refer to NSPS, which, in general, predate NESHAP. In developing various NESHAP, we determined that the 30 percent buffers were not necessary. For this reason, most NESHAP specify that exceeding an operating parameter over the specified averaging period is a deviation. The commenters also mentioned the Pulp and Paper MACT. However, the Pulp and Paper MACT would appear to be unusual in regards to the allowance for exceedances. The commenters did not provide any rationale why we should add provisions similar to the Pulp and Paper MACT

when other MACT standards do not allow exceedances.

The commenters also referred to a statement in the CAM proposal and guidance document. The CAM rule only applies to emission limitations or standards proposed by the Administration on or before November 15, 1990. Monitoring and control technology have progressed significantly since the technology available when these older rules were developed. Also, facilities have 3 years to install control equipment and learn their processes' operating parameters and set up compliance test conditions that result in operating limits that both result in compliance with the PM emission limit and can be met on a continuous basis. For these reasons, we do not agree that the CAM applies here.

Most operating parameters are required to be calculated as 3-hour averages. This is generally consistent with performance test times. Thus, a 1-hour period of insufficient gas pressure drop will not, by itself, be considered an excursion.

Facilities must complete their performance tests prior to the compliance date. Therefore, they are not required to be in compliance with the emission limits during testing, and there is no reason to provide an exemption.

Comment: In response to EPA's request for comments on the appropriate opacity limit (EPA was considering an opacity limit of 10 to 15 percent), several commenters stated that the opacity standard for lime kilns should be 15 percent, as proposed. One commenter provided additional data in the form of opacity data from four kilns. According to this commenter, the opacity data for selected kilns are not reliable for establishing an opacity standard because they are from visible emission data collected for brief periods of time under poor viewing conditions.

Response: Based on information considered prior to proposal as well as additional information supplied by commenters, EPA is retaining the 15 percent opacity limit for sources controlled using FF and ESP. Information considered by EPA in proposing the opacity limit suggested that the average opacity permit limit of the top performing lime kilns was 15 percent. Information provided by the commenters supporting the proposed opacity limit indicated that opacity levels may vary between 10 and 15 percent even for well operated and maintained kilns. No information was provided supporting a more stringent, or more lenient opacity limit than the one proposed. Therefore, EPA is retaining

the proposed 15 percent opacity limit in the final NESHAP.

Comment: Several commenters requested that the final rule specify a time period during which opacity readings greater than 15 percent are not considered a violation. One commenter requested at a minimum that the final rule state that opacity readings greater than 15 percent for less than 1 percent of the reporting period are not considered to be a violation.

Another commenter noted that they operate two of the top six performers in the industry, and it is impossible not to have occasional readings that would be violations if there were no allowances for them. The commenter's State permits allow 1 percent of operating time per quarter to exceed the opacity limit.

Another commenter suggested other time frames for allowable exceedances. Two commenters referred to the Pulp and Paper MACT as an example of an existing rule with such an exemption.

Response: We find no justification to support allowing excursions above the 15 percent opacity limit. Well operated and maintained control devices will typically operate at opacity levels much lower than 15 percent. Other NESHAP, including the portland cement NESHAP, contain opacity limits for which no exceedances are allowed. Data from lime kilns, cited below, support this. Because we have industry specific data, the Pulp and Paper MACT example is not applicable.

In response to the commenters' concerns about occasional excursions above the opacity limit, there are times when opacity levels above 15 percent are not considered to be a violation of the final rule. These include periods when a control device malfunctions, or is in a period startup or shutdown (as long as the facility follows its SSMP). If opacity levels exceed 15 percent as a result of a control device startup, shutdown, or malfunction, it will not be considered a violation of the opacity limit (see § 63.7121(b) of the final rule). The same is true during periods when a monitoring system malfunctions or is being calibrated (see § 63.7120(b) of the final rule).

Information supplied by one commenter showed opacity readings for several kilns over several days. Nearly all of the readings were well below the 15 percent limit with just a few exceptions for each kiln. The commenter who supplied the opacity readings was asked to supply additional information regarding the opacity excursions above 15 percent. In each instance, the high opacity reading was explained by a startup, shutdown, or

malfuction of the control device or by a malfunctioning monitor or a monitoring system that was undergoing calibration, none of which will be considered a violation of the opacity limit as long as the facility follows its SSMP. Well run and maintained control devices can meet the opacity limit and the occasional excursion above the limit due to control device or monitoring system malfunction will not be a violation of the operating limit.

Comment: One commenter claimed that the economic impacts analysis (EIA) neglected to include some significant costs of implementing the rule, including the cost of dismantling existing equipment, lost sales during downtime, and the cost of re-hiring personnel after plant modifications if scrubbers must be replaced. The commenter also noted that maintenance and supervisory personnel currently do not work evening and weekend shifts, but will likely be required in the event of failure of the recommended monitoring equipment.

A second commenter stated EPA's estimated \$1.17 per ton of lime cost estimate for control costs is low, and the cost to a typical lime producer will be significantly higher. In particular, the commenter noted that the additional power required for high pressure drop scrubbers alone would be approximately \$1.30 per ton of produced lime. In addition, EPA's estimated equipment costs appear to be low.

Response: As discussed in the response to comments regarding a separate subcategory for scrubbers, estimated implementation costs used for the EPA model plants include costs for demolition of existing equipment and credits for salvage value. Because plants have a 3-year period in which to comply with the final NESHAP, it is expected that scheduled downtime will be used for disconnecting an existing scrubber and connecting a new scrubber. As a general practice, building a new scrubber while the existing scrubber remains in operation is preferable to taking the associated kiln out of service for an extended period of time and losing production from the kiln. The plant is expected to use its labor force in the manner normally found for planned downtime. Such labor costs (or savings) would not be attributable to compliance with the final NESHAP.

Power costs for new scrubbers are calculated incrementally, *i.e.*, costs are estimated for the difference between 35-inch. w.g. (new scrubbers) and 14 inch w.g. (existing scrubbers). For individual model kilns, summing the power costs and dividing by the model's production rate gives estimated incremental power

costs ranging from \$0.82 to \$1.47/ton of lime. On a nationwide basis, aggregating the model kiln costs apportioned among the affected kiln population provides average costs as estimated by EPA.

Comment: One commenter claimed that the EIA is seriously flawed because it assumes lime producers can pass control costs through to consumers. The commenter maintained that lime producers cannot raise prices. The reasons cited included a highly competitive market due to overcapacity, competition from unregulated sources, the existence of competitive substitutes for most key markets, and significant market resistance. The commenter also claimed that recent history proves that prices cannot be increased. Finally, the commenter stated that because the price increase assumed by EPA is erroneous, EPA's prediction that only two lime plants will close seriously understates the impact. One other commenter also stated that they could not increase prices.

Response: We conducted an economic analysis primarily as part of the Executive Order 12866 analysis and partly to ascertain impacts on small businesses for purposes of compliance with the Small Business Regulatory and Enforcement Fairness Act (SBREFA). The analysis is also used to determine economic impacts of any beyond-the-floor considerations under section 112(d)(2) of the CAA. However, as provided by section 112(d)(3), and confirmed by the D.C. Circuit in the *National Lime* case, considerations of costs are simply irrelevant to determinations of MACT floors. Thus, EPA did not consider any of the economic analysis as part of its floor determinations, and that context should be understood in all of the responses to comments relating to the Agency's economic impact analysis.

The fact that many lime plants are currently operating at less than full capacity implies that their supply curves should be relatively elastic (flat) at current production levels because lime producers can fairly easily change output without running into capacity constraints.

Assuming that the lime industry is very competitive (as stated by the commenter) and has substantial overcapacity implies that the industry marginal cost curve (and the market supply curve) should be relatively flat at current production levels. To the extent that the costs of the lime manufacturing MACT standards increase the marginal costs of lime production, having a very elastic (flat) supply curve is a textbook case where the majority of the costs are passed on to consumers. A highly

competitive market implies, by definition, that individual producers cannot unilaterally increase their prices without losing most, if not all, of their customers. It does not imply that the market price will not increase in response to a general increase in the cost of lime production due to environmental regulations.

It is certainly true that foreign lime suppliers (including suppliers located in Mexico) gain because the final rule applies only to domestic lime producers. However, imports of lime account for an extremely tiny share of the lime market prior to the final rule (about 1 percent nationally), and even a fairly large percentage increase in imports shows up as a very small change in absolute terms. High transportation costs are expected to prevent significant replacement of domestic lime with imported lime.

To examine the historical supply responsiveness in the lime market, we estimated the supply elasticity for lime using data from 1983–2001. These estimates capture the overall change in the quantity of lime supplied in response to a change in the real (inflation-adjusted) price of lime, including any entry or exit of captive suppliers from the market. Based on estimates obtained from the econometric model, the domestic lime supply elasticity was 1.24 at the average price and quantity for the period and 0.98 using the lime price and quantity for 1997, the baseline year for the EIA. The value for the baseline year implies that a 1 percent increase in price would lead lime producers to increase their lime production by 0.98 percent, other things being equal.

For the lime price to remain constant due to entry into the commercial market by captive suppliers, that entry would need to be sufficient that it led to the market supply curve being perfectly elastic. There is no evidence for a perfectly elastic market supply curve due to large-scale entry based on historical estimates of the responsiveness of lime supply to changes in real price.

There are substitutes for lime in many of the markets in which it competes, such as crushed limestone, caustic soda, soda ash, and other products. However, unless the alternatives are perfect substitutes, this does not imply that the price of lime will not increase in response to an increase in production costs.

The fact that lime prices have not increased in recent years despite plant closures and increases in real prices in no way implies that those events do not exert upward pressure on prices. The

relevant comparison is the price with and without those events, not before and after they occur. It is expected that prices would have been even lower if there had not been closures and increases in input prices.

As outlined in the responses to these comments, there is no evidence to support the claim that the assumption that lime price will increase is erroneous, and that the estimated economic impact of the final rule is understated.

Comment: One commenter stated that the EPA economic model for the lime market assumes a nationally perfectly competitive market, but lime prices are primarily dictated by large producers who sell capacity regardless of price.

Response: This comment suggests that large lime producers have market power and, therefore, face a downward sloping demand curve and have some ability to set prices. If large lime producers do possess market power, then profit-maximizing behavior would imply that they would restrict output below the levels expected under perfect competition in order to increase market price to the point that their marginal revenue is equal to their marginal cost. The large producers may have lower marginal costs such that the resulting price makes it difficult for the small producers that take the market price as given to remain in business. However, the presence of market power in the lime industry would tend to increase prices relative to the perfectly competitive case, not decrease them.

Comment: One commenter was concerned over EPA's use of the Acute Exposure Guideline Level (AEGL) in assessing the health risk associated with HCl. While not directly objecting to the conclusions reached by EPA, the commenter noted that the intended use of the AEGL, according to the National Research Council, is in conjunction with "once in a lifetime" exposures for emergency exposures ranging from 10 minutes to 8 hours. Because the AEGL values are intended to be used in conjunction with a single lifetime exposure, they can be higher than short term limits recommended for populations with repeated exposures. It is not clear in the description of the industry analysis, if in their use of AEGL they were contemplating a once in a lifetime exposure or whether exposures would be occurring repeatedly. The commenter stated that EPA should explicitly state how they believe AEGL values should be used in their risk assessment process and what are the possible exposure levels to the public. The commenter was also troubled by the use in the rationale of

both the reference concentration (estimated daily exposure that over a lifetime is not likely to result in significant noncancer effect in humans) and the AEGL (once in a lifetime exposure).

The commenter asked that EPA clarify their position on the use of AEGL values for environmental risk assessments, and whether its use represents a "reasonable methodology" and "consistent with EPA methodology" as claimed in the preamble.

Response: In order to evaluate short-term exposure to hydrochloric acid, EPA reviewed the available acute dose-response values for this compound. Among these, the Calliope reference exposure level (REL) and AEGL-1 values (2.1 and 2.7 mg/M³, respectively) were found to be the most health protective. Since these benchmarks were effectively the same, and AEGL values are products of a Federal effort in which EPA participates, we gave priority to the AEGL. Therefore, the AEGL-1 selected for analysis represented the most appropriate value.

Comment: Several commenters stated the final rule should not require HCl testing of all kilns. The commenters note that in recent years, many lime plants have been forced to idle or infrequently operate kilns at operating plants due to increased fuel cost, reduced customer demand, *etc.*, and start up of every kiln for the purpose of conducting HCl testing will require significant expenditures. This will also result in PM and other emissions that otherwise would not be generated. As a result, it was requested the final rule be written to provide state agencies with the discretion to determine whether testing of all kilns at a lime plant is necessary in order to demonstrate that a plant is an area source.

Response: In the final NESHAP, we have included language allowing the permitting authority discretion concerning whether idle kilns must be tested.

Comment: Several commenters stated that performance testing should be conducted under "representative" conditions rather than under the "highest production level reasonably expected to occur." One commenter noted inconsistencies between what is proposed in Table 4 in the proposed rule and what is required under the General Provisions at 40 CFR 63.7(e)(1). The EPA has recently amended the Cement MACT to fix similar inconsistencies, and the commenter suggested the lime MACT be similarly revised.

Response: We have written the requirement in the final rule to require

testing under representative conditions, which is in agreement with the language in the General Provisions.

Comment: Two commenters stated the final rule should provide a risk-based exemption from the entire rule (not just from HCl standards) for plants at which modeled risks are below health based thresholds. One commenter noted that EPA recently solicited comment on providing risk-based exemptions in proposed MACT standards for several source categories. This commenter strongly supported the view that such exemptions should be provided in MACT standards that impose substantial costs while achieving negligible reductions in risks to public health and stated the lime MACT fits this description.

Response: Other than the decision to not regulate emissions of HCl from lime manufacturing, EPA did not consider and did not request comments on providing risk-based exemptions for lime manufacturing facilities. Although EPA is aware that risk-based exemptions were being discussed in other proposed rules, no decisions have been made by the Agency regarding risk-based exemptions and application to industry groups or individual plants. Due to the uncertainty of how these exemptions would be structured, it would not be appropriate to include these site specific risk-based exemptions in the final rule. Including such a substantive statement change in the final rule without allowing the general public an opportunity to comment would be a violation of the notice and comment requirements found in section 307(d) of the CAA, especially in light of the fact that their inclusion in other proposed rules have generated significant negative public comment.

Comment: One commenter stated the benefits analysis is based on inaccurate assumptions, and presented conclusions regarding reductions in metal HAP that are greatly overstated.

The commenter also claimed that the emission factor for existing uncontrolled stone handling operations is also overstated; it was derived using AP-42 emission factors with "E" ratings. The commenter stated that it presented to the SBREFA Panel a more reliable emission factor for these units that is rated "C" and was revised in 1995.

In addition, the commenter claimed that EPA overstated the amount of new capacity and the emissions from new rotary kilns. The commenter stated, "EPA should either reflect (our) estimates in the preamble to the final rule, or provide a reasoned response to our comments that EPA's estimates are overstated" * * * we believe the best

estimate of metal HAP reductions is 3.5 tons (7,000 pounds) per year. Based on the 56 lime plants predicted to be subject to the MACT rule, this translates into an annual reduction in metal HAP per lime plant of 124 pounds.

Response: We reviewed the new information on PM emissions presented by the commenter, as well as their calculations of baseline emissions and emission reductions resulting from the final rule. In the case of baseline emissions from kilns and coolers, the information provided by the commenter is a more reasonable estimate than the emission factors we used at proposal. Therefore, we revised our baseline PM emissions estimates to incorporate this new information. In the case of emissions from PSH operations, we based our emission estimates on a mass balance approach. This method is reasonably accurate, and we did not revise baseline emission estimates for PSH operations. This resulted in our estimate of metal HAP emission reductions to be changed to 14.4 tpy, compared to an estimate of 23 tpy.

V. Statutory and Executive Order Reviews

A. Executive Order 12866, Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), we are required to 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 Executive 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 entitlements, 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, OMB notified EPA at proposal that it considered this rulemaking a "significant regulatory action" within the meaning of the Executive Order. The EPA submitted the

proposed rule to OMB for review. Changes made in response to OMB suggestions or recommendations are documented and included in the public record. The OMB has informed EPA that it considers this final action nonsignificant. Therefore, it is not subject to further OMB review. The OMB was briefed on the responses to major comments, and was provided a copy of the regulation and preamble prior to publication. However, they did not request any changes in the final rule.

B. Paperwork Reduction Act

The information collection requirements in the final rule have been submitted for approval to the Office of Management and Budget under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* We have prepared an Information Collection Request (ICR) document (2072.01), and a copy may be obtained from Susan Auby by mail at U.S. EPA, Office of Environmental Information, Collection Strategies Division (2822T), 1200 Pennsylvania Avenue, NW., Washington DC 20460, by e-mail at auby.susan@epa.gov, or by calling (202) 566-1672. You may also download a copy off the Internet at <http://www.epa.gov/icr>. The information requirements are not effective until OMB approves them.

The information requirements are based on notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emission standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

The final rule will require development and implementation of an OM&M plan, which will include inspections of the control devices but will not require any notifications or reports beyond those required by the NESHAP General Provisions (40 CFR part 63, subpart A). The recordkeeping requirements require only the specific information needed to determine compliance.

The annual monitoring, reporting, and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the rule) is estimated to be 7,800 labor hours per year, at a total annual cost of \$621,600. This estimate

includes notifications that facilities are subject to the rule; notifications of performance tests; notifications of compliance status, including the results of performance tests and other initial compliance demonstrations that do not include performance tests; startup, shutdown, and malfunction reports; semiannual compliance reports; and recordkeeping. Total capital/startup costs associated with the testing, monitoring, reporting, and recordkeeping requirements over the 3-year period of the ICR are estimated to be \$1,000,000, with annualized costs of \$377,900.

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 our regulations are listed in 40 CFR part 9 and 48 CFR chapter 15. When the OMB approves the information collection requirements of the final rule, the EPA will amend the table in 40 CFR part 9 of currently approved ICR control numbers issued by OMB for various regulations.

C. Regulatory Flexibility Analysis

The EPA has prepared a final regulatory flexibility analysis (FRFA) in connection with the final rule. For purposes of assessing the impacts of today's final rule on small entities, a small entity is defined as (1) a small business as a lime manufacturing company with less than 500 employees; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small

entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. Despite the determination that the final rule will have no significant impact on a substantial number of small entities, EPA prepared a Small Business Flexibility Analysis that has all the components of a FRFA. An FRFA examines the impact of the final rule on small entities. The Small Business Flexibility Analysis (which is included in the economic impact analysis) is available for review in the docket, and is summarized below.

It should be noted that the small business impacts described below slightly overestimate the impacts for today's action, for they reflect the higher cost estimates (\$22.4 million) associated with the proposed rule.

Based on SBA's size definitions for the affected industries and reported sales and employment data, EPA identified 19 of the 45 companies owning potentially affected facilities as small businesses. Eight of these 45 companies manufacture beet sugar (which will not be subject to the final NESHAP), three of which are small firms. Further, an additional 3 of the 19 small companies will not be subject to the final NESHAP because they do not manufacture lime in a kiln (e.g., they are only depot or hydration facilities), and/or we do not expect them to be major sources. It is, therefore, expected that 13 small businesses will be subject to the final NESHAP. Although small businesses represent 40 percent of the companies within the source category, they are expected to incur 30 percent of the total industry annual compliance costs of \$18.0 million.

The economic impact analysis we prepared for the final NESHAP includes an estimate of the changes in product price and production quantities for the firms that the final NESHAP would affect. The analysis shows that of the facilities owned by potentially affected small firms, two may shut down rather than incur the cost of compliance with the final rule. Because of the nature of their production processes and existing controls, we expect these two firms will incur significantly higher compliance costs than the other small firms.

Although any facility closure is cause for concern, it should be noted that in general, the burden on most small firms is low when compared to that of large firms. The average annual compliance costs for all small firms is \$358,000, compared to \$592,000 per year for large firms. If the two small firms expected to incur significantly higher control costs are excluded, the average annual compliance cost for the remaining firms

will be \$205,000, which is much less than the average control costs for large firms.

The EPA's efforts to minimize small business impacts have materially improved today's final rule. Economic analysis of provisions under earlier consideration prior to the rule's proposal indicated greater impacts on small businesses than those in today's final rule. For the small companies expected to incur compliance costs, the average total annual compliance cost would have been roughly \$567,000 per small company (compared with \$358,000 in today's final rule). About 85 percent (11 firms) of those small businesses expected to incur compliance costs would have experienced an impact greater than 1 percent of sales (compared with 69 percent of those small businesses in today's final rule). And, 77 percent (10 firms) of those small businesses expected to incur compliance costs would have experienced impacts greater than 3 percent of sales (compared with 31 percent of those small businesses in today's final rule).

Before concluding that the Agency could properly certify today's final rule under the terms of the RFA, EPA conducted outreach to small entities and convened a Panel as required by section 609(b) of the RFA to obtain the advice and recommendations from representatives of the small entities that potentially would be subject to the proposed rule requirements. The Panel convened on January 22, 2002, and was comprised of representatives from OMB, the SBA Office of Advocacy, the EPA Small Business Advocacy Chair, and the Emission Standards Division of the Office of Air Quality Planning and Standards of EPA. The Panel solicited advice from eight small entity representatives (SER), including the National Lime Association (NLA) and member companies and non-member companies of the NLA. On January 30, 2002, the Panel distributed a package of descriptive and technical materials explaining the rule-in-progress to the SER. On February 19, 2002, the Panel met with the SER to hear their comments on preliminary options for regulatory flexibility and related information. The Panel also received written comments from the SER in response to both the outreach materials and the discussions at the meeting.

Consistent with RFA/SBREFA requirements, the Panel evaluated the assembled materials and small-entity comments on issues related to the elements of the initial RFA. A copy of the Panel report is included in the docket for the final rule.

The Panel considered numerous regulatory flexibility options in response to concerns raised by the SER. The major concerns included the affordability and technical feasibility of add-on controls.

These are the Panel recommendations and EPA's responses:

- Recommend that the proposed rule should not include the HCl work practice standard, invoking section 112(d)(4) of CAA.

Response: The proposed rule did not include an emission standard for HCl. The final rule also contains no emission standard for HCl.

- Recommend that in the proposed rule, the MPO in the quarry should not be considered as emission units under the definition of affected source.

Response: The MPO in the quarry were excluded from the definition of affected source in the proposed rule. They are also excluded in the final rule.

- Recommend that the proposed rule allow for the "bubbling" of PM emissions from all of the lime kilns and coolers at a lime plant, such that the sum of all kilns' and coolers' PM emissions at a lime plant would be subject to the PM emission limit, rather than each individual kiln and cooler.

Response: The proposed rule defined the affected source as including all kilns and coolers (among other listed emission units) at the lime manufacturing plant. This would allow the source to average emissions from the kilns and coolers for compliance determination. In the final rule we have retained averaging provisions with the following modifications. New kilns and existing kilns may be averaged together, new kilns must individually meet the 0.10 lb/tsf PM emission limit, and existing kilns subject to the 0.60 lb/tsf PM emission limit may not be included in any averaging scheme. Due to other changes in the rule, the changes in the averaging provisions do not increase the stringency of the final rule compared to the proposed rule.

- Recommend that we request comment on establishing a subcategory for existing kilns that currently have wet scrubbers for PM control because of the potential increase in SO₂ and HCl emissions that may result in complying with the PM standard in the proposed rule.

Response: We requested comment on this issue in the proposed rule. Based on the comments received, we determined that a separate subcategory for scrubber equipped kilns was not appropriate. However, we have included in the final rule separate standards for kilns with dry PM emissions control systems, and wet scrubbers. This change addresses

the underlying concern of the original comment.

- Recommend that we undertake an analysis of the costs and emissions impacts of replacing scrubbers with dry APCD and present the results of that analysis in the preamble; and that we request comment on any operational, process, product, or other technical and/or spatial constraints that would preclude installation of a dry APCD.

Response: We requested comment on these issues in the proposed rule and presented said analysis. We responded to all comments on these issues in the final rule.

- Recommend that the proposed rule allow a source to use the ASTM HCl manual method for the measurement of HCl for area source determinations.

Response: The proposed rule included this provision. This provision has been retained in the final rule.

- Recommend that we clarify in the preamble to the proposed rule that we are not specifically requiring sources to test for all HAP to make a determination of whether the lime plant is a major or area source, and that we solicit public comment on related issues.

Response: The preamble of the proposed rule contained this language. In the final rule, we do not specify that testing for all HAP is required. However, we do not specifically say it is precluded because these determinations are better made on a case-by-case basis by the permitting authority.

- Recommend that we solicit comment on providing the option of using COMS in place of BLDS; recommend that we solicit comment on various approaches to using COMS; and recommend soliciting comment on what an appropriate opacity limit would be.

Response: The preamble of the proposed rule solicited comment on these issues.

- Recommend that EPA take comment on other monitoring options or approaches, including the following: using longer averaging time periods (or greater frequencies of occurrence) for demonstrating compliance with parameter limits; demonstrating compliance with operating parameter limits using a two-tier approach; and the suitability of other PM control device operating parameters that can be monitored to demonstrate compliance with the PM emission limits, in lieu of or in addition to the parameters currently required in the draft rule.

Response: The preamble of the proposed rule solicited comment on these issues.

- Recommend that the incorporation by reference of Chapters 3 and 5 of the American Conference of Governmental

Industrial Hygienists (ACGIH) Industrial Ventilation manual be removed from the proposed rule.

Response: The proposed rule did not include this requirement. This requirement is also not present in today's final rule.

- Recommend that EPA reevaluate the assumptions used in modeling the economic impacts of the standards and conduct a sensitivity analysis using different price and supply elasticities reflective of the industry's claims that there is little ability to pass on control costs to their customers, and there is considerable opportunity for product substitution in a number of the lime industry's markets.

Response: The EIA does include the aforementioned considerations and analyses at proposal. In addition, we have performed additional economic sensitivity analyses for the final rule.

In summary, to better understand the implications of the proposed rule from the industries' perspective, we engaged with the lime manufacturing companies in an exchange of information, including small entities, during the overall rule development. Prior to convening the Panel, we had worked aggressively to minimize the impact of the proposed rule on small entities, consistent with our obligations under the CAA. These efforts are summarized below.

- Lime manufacturing operations at beet sugar plants, of which three are small businesses, will not be affected sources.

- Lime manufacturing plants that produce hydrated lime only will not be affected sources as well.

- We proposed PM emission limits which allow the affected source, including small entities, flexibility in choosing how they will meet the emission limit. And in general, the emission limitations selected are all based on the MACT floor, as opposed to more costly beyond-the-MACT-floor options that we considered. An emission limit for mercury was rejected since it would have been based on a beyond-the-MACT-floor control option.

- We proposed that compliance demonstrations for PSH operations be conducted monthly rather than on a daily basis. This reduced the amount of records needed to demonstrate compliance with the rule when implemented. Furthermore, we proposed the minimum performance testing frequency (every 5 years), monitoring, recordkeeping, and reporting requirements specified in the General Provisions (40 CFR part 63, subpart A).

- Finally, many lime manufacturing plants owned by small businesses will not be subject to the proposed standards because they are area sources.

We received several comments on the economic analysis for the proposed rule. The majority of these comments related to the analysis in general, rather than the initial regulatory flexibility analysis. Two comments that specifically addressed small business concerns follow.

Comment: One commenter claimed that EPA did not perform a sufficient sensitivity analysis of different price and supply elasticities in the EIA as recommended in the Panel's final report.

Response: We estimated the market supply and demand elasticities for lime. The values from the preferred model for 1997 are very close to the primary elasticities used in the main text of the EIA for the proposed rule and are well within the range of elasticities used in the sensitivity analysis in Appendix B of the EIA for the proposed rule. In addition to the preferred model, numerous alternative models were estimated. As with any modeling exercise, there were some differences in results across different model specifications. However, the results were generally similar across specifications and there were no cases in which the estimated supply or demand elasticity fell outside the ranges currently used in the Appendix B sensitivity analysis included in the EIA. Thus, the current analysis adequately responds to SBREFA panel recommendations that a reasonable sensitivity analysis be employed and the empirical evidence is supportive of the current scenario presented in the main text.

Comment: One commenter claimed that although EPA has indicated its rule will have larger impacts on small businesses than large ones, the disparity is even greater than EPA estimates. The reductions in pre-tax earnings presented in the EIA underestimate losses for small firms because the costs of implementation will be higher than EPA estimates and the price of lime will not increase. They also state that even if only 2 to 3 of the 14 small lime firms close, that would still be closure of 14 percent to 21 percent of the small lime firms in the domestic industry. This seems to be such a significant economic impact that it should encourage the EPA to seriously consider additional ways to minimize the impact on small businesses.

Response: It is unclear what the basis for the first part of this comment is (it seems the same claims they are making

for small firms would also apply to large firms). As far as the second part, to the extent that actual costs differ from EPA estimates, it is possible that the actual losses experienced by firms will be higher or lower than presented in the EIA. However, the costs of implementation currently used for analysis reflect EPA's best estimate of actual costs. The assertion that lime prices cannot increase in response to an increase in production costs is not credible.

We also disagree that the number of small firms at risk of closure, 2 to 3, can be considered a significant number in the context of SBREFA. In any case, EPA has seriously considered ways to minimize the impact on small businesses based on comments from industry and has substantially reduced the costs of the rule relative to the draft of the rule we were considering prior to the small business advocacy review panel. As previously discussed, EPA, along with the SBA and the OMB, convened a panel under the authority of SBREFA to talk with small business representatives on how to mitigate potential impacts to small businesses associated with the lime manufacturing NESHAP. This panel yielded a report that included many recommendations on how potential impacts to small businesses from the proposal could be mitigated. All of these recommendations are reflected in the final rule.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, we generally would be required to prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local, and tribal governments, in aggregate, or by the private sector, of \$100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires us to identify and consider a reasonable number of regulatory alternatives and adopt the least-costly, most cost-effective, or least-burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows us to adopt an alternative other than the least-costly, most cost-effective, or least-burdensome alternative if the

Administrator publishes with the final rule an explanation why that alternative was not adopted. Before we establish any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, we would be required to have developed under section 203 of the UMRA a small government agency plan. The plan will be required to provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of our regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

We have determined that the final rule does not contain a Federal mandate that may result in expenditures of \$100 million or more by State, local, and tribal governments, in the aggregate, or the private sector in any 1 year. The total cost to the private sector is approximately \$22.4 million per year. The final rule contains no mandates affecting State, local, or tribal governments. Thus, today's final rule is not subject to the requirements of sections 202 and 205 of the UMRA.

We have determined that the final rule contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments or impose obligations upon them.

E. Executive Order 13132, Federalism

Executive Order 13132 (64 FR 43255, August 10, 1999) requires us to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

Under Section 6 of Executive Order 13132, we may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or we consult with State and local officials early in the process of developing the proposed regulation. We also may not issue a

regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

If we comply by consulting, Executive Order 13132 requires us to provide to OMB, in a separately identified section of the preamble to the rule, a federalism summary impact statement (FSIS). The FSIS would be required to include a description of the extent of our prior consultation with State and local officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met. Also, when we transmit a draft final NESHAP with federalism implications to OMB for review pursuant to Executive Order 12866, we would be required to include a certification from the Agency's Federalism Official stating that we have met the requirements of Executive Order 13132 in a meaningful and timely manner.

The final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. The final rule will not impose directly enforceable requirements on States, nor will it preempt them from adopting their own more stringent programs to control emissions from lime manufacturing facilities. Moreover, States are not required under the CAA to take delegation of Federal NESHAP and bear their implementation costs, although States are encouraged and often choose to do so. Thus, Executive Order 13132 does not apply to the final rule.

F. Executive Order 13175, Consultation and Coordination With Indian Tribal Governments

Executive Order 13175 (65 FR 67249, November 9, 2000) requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." The final rule does not have tribal implications, as specified in Executive Order 13175. There are no lime manufacturing plants located on tribal land. Thus, Executive Order 13175 does not apply to the final rule.

G. Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we would be required to evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by us.

We interpret Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Executive Order has the potential to influence the regulation. The final rule is not subject to Executive Order 13045 because it is based on technology performance and not on health or safety risks.

H. Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

The final rule is not a "significant energy action" as defined in Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Although compliance with the final rule could possibly lead to increased electricity consumption as sources may replace existing wet scrubbers with venturi wet scrubbers that require more electricity, the final rule will not require that venturi scrubbers be installed, and in fact, there are some alternatives that may decrease electrical demand. Further, the final rule will have no effect on the supply or distribution of energy. Although we considered certain fuels as potential bases for MACT, none of our MACT determinations are based on fuels. Finally, we acknowledge that an interpretation limiting fuel use to the top 6 percent of 'clean HAP' fuels (if they existed) could potentially have adverse implications on energy supply.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Pub. L. No. 104-113; 15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards in their regulatory and procurement

activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA directs EPA to provide Congress, through annual reports to the OMB, with explanations when an agency does not use available and applicable voluntary consensus standards.

The final rule involves technical standards. The EPA cites the following standards in the final rule: EPA Methods 1, 1A, 2, 2A, 2C, 2D, 2F, 2G, 3, 3A, 3B, 4, 5, 5D, 9, 17, 18, 22, 320, 321. Consistent with the NTTAA, EPA conducted searches to identify voluntary consensus standards in addition to these EPA methods. No applicable voluntary consensus standards were identified for EPA Methods 1A, 2A, 2D, 2F, 2G, 5D, 9, 22, and 321. The search and review results have been documented and are placed in the docket (OAR-2002-0052) for the final rule.

The three voluntary consensus standards described below were identified as acceptable alternatives to EPA test methods for the purposes of the final rule.

The voluntary consensus standard ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," is cited in the final rule for its manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas. This part of ASME PTC 19-10-1981-Part 10 is an acceptable alternative to Method 3B.

The voluntary consensus standard ASTM D6420-99, "Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry (GC/MS)," is appropriate in the cases described below for inclusion in the final rule in addition to EPA Method 18 codified at 40 CFR part 60, appendix A, for the measurement of organic HAP from lime kilns.

Similar to EPA's performance-based Method 18, ASTM D6420-99 is also a performance-based method for measurement of gaseous organic compounds. However, ASTM D6420-99 was written to support the specific use of highly portable and automated GC/MS. While offering advantages over the traditional Method 18, the ASTM method does allow some less stringent criteria for accepting GC/MS results than required by Method 18. Therefore, ASTM D6420-99 is a suitable alternative to Method 18 only where the

target compound(s) are those listed in Section 1.1 of ASTM D6420-99, and the target concentration is between 150 parts per billion by volume and 100 parts per million by volume.

For target compound(s) not listed in Section 1.1 of ASTM D6420-99, but potentially detected by mass spectrometry, the final rule specifies that the additional system continuing calibration check after each run, as detailed in Section 10.5.3 of the ASTM method, must be followed, met, documented, and submitted with the data report even if there is no moisture condenser used or the compound is not considered water soluble. For target compound(s) not listed in Section 1.1 of ASTM D6420-99, and not amenable to detection by mass spectrometry, ASTM D6420-99 does not apply.

As a result, EPA will cite ASTM D6420-99 in the final rule. The EPA will also cite Method 18 as a GC option in addition to ASTM D6420-99. This will allow the continued use of GC configurations other than GC/MS.

The voluntary consensus standard ASTM D6735-01, "Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method," is an acceptable alternative to EPA Method 320 for the purposes of the final rule provided that the additional requirements described in Section 63.7142 of the final rule are also addressed in the methodology.

In addition to the voluntary consensus standards EPA uses in the final rule, the search for emissions measurement procedures identified 15 other voluntary consensus standards. The EPA determined that 12 of these 15 standards identified for measuring emissions of the HAP or surrogates subject to emission standards in the final rule were impractical alternatives to EPA test methods for the purposes of this rule. Therefore, EPA does not intend to adopt these standards for this purpose. The reasons for this determination can be found in the docket for the final rule.

Three of the 15 voluntary consensus standards identified in this search were not available at the time the review was conducted for the purposes of the final rule because they are under development by a voluntary consensus body: ASME/BSR MFC 13M, "Flow Measurement by Velocity Traverse," for EPA Method 2 (and possibly 1); ASME/BSR MFC 12M, "Flow in Closed Conduits Using Multiport Averaging Pitot Primary Flowmeters," for EPA Method 2; and ASTM D6348-98, "Determination of Gaseous Compounds by Extractive Direct Interface Fourier

Transform (FTIR) Spectroscopy," for EPA Method 320.

The standard ASTM D6348-98, "Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy" has been reviewed by the EPA and comments were sent to ASTM. Currently, the ASTM Subcommittee D22-03 is undertaking a revision of ASTM D6348-98. Upon successful ASTM balloting and demonstration of technical equivalency with the EPA FTIR methods, the revised ASTM standard could be incorporated by reference for EPA regulatory applicability.

Section 63.7112 and Table 4 to subpart AAAA of 40 CFR part 63 list the EPA testing methods included in the final rule. Under §§ 63.7(f) and 63.8(f) of subpart A of the General Provisions, a source may apply to EPA for permission to use alternative test methods or alternative monitoring requirements in place of any of the EPA testing methods, performance specifications, or procedures.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the SBREFA, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing the final rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the final rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). The final rule will be effective on January 5, 2004.

List of Subjects in 40 CFR Part 63

Administrative practice and procedure, Air pollution control, Environmental protection, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: August 25, 2003.

Marianne Lamont Horinko,
Acting Administrator.

■ For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of the Federal Regulations is to be amended as follows:

PART 63—[AMENDED]

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

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

Subpart A—[Amended]

■ 2. Part 63 is amended by adding subpart AAAAA to read as follows:

Subpart AAAAA—National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants

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What This Subpart Covers**§ 63.7080 What is the purpose of this subpart?**

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for lime manufacturing plants. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.

§ 63.7081 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a lime manufacturing plant (LMP) that is a major source, or that is located at, or is part of, a major source of hazardous air pollutant (HAP) emissions, unless the LMP is located at a kraft pulp mill, soda pulp mill, sulfite pulp mill, beet sugar manufacturing plant, or only processes sludge containing calcium carbonate from water softening processes.

(1) An LMP is an establishment engaged in the manufacture of lime product (calcium oxide, calcium oxide with magnesium oxide, or dead burned dolomite) by calcination of limestone, dolomite, shells or other calcareous substances.

(2) A major source of HAP is a plant site that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more per year or any combination of HAP at a rate of 22.68 megagrams (25 tons) or more per year from all emission sources at the plant site.

(b) [Reserved]

§ 63.7082 What parts of my plant does this subpart cover?

(a) This subpart applies to each existing or new lime kiln(s) and their associated cooler(s), and processed stone handling (PSH) operations system(s) located at an LMP that is a major source.

(b) A new lime kiln is a lime kiln, and (if applicable) its associated lime cooler,

for which construction or reconstruction began after December 20, 2002, if you met the applicability criteria in § 63.7081 at the time you began construction or reconstruction.

(c) A new PSH operations system is the equipment in paragraph (g) of this section, for which construction or reconstruction began after December 20, 2002, if you met the applicability criteria in § 63.7081 at the time you began construction or reconstruction.

(d) A lime kiln or PSH operations system is reconstructed if it meets the criteria for reconstruction defined in § 63.2.

(e) An existing lime kiln is any lime kiln, and (if applicable) its associated lime cooler, that does not meet the definition of a new kiln of paragraph (b) of this section.

(f) An existing PSH operations system is any PHS operations system that does not meet the definition of a new PSH operations system in paragraph (c) of this section.

(g) A PSH operations system includes all equipment associated with PSH operations beginning at the processed stone storage bin(s) or open storage pile(s) and ending where the processed stone is fed into the kiln. It includes man-made processed stone storage bins (but not open processed stone storage piles), conveying system transfer points, bulk loading or unloading systems, screening operations, surge bins, bucket elevators, and belt conveyors. No other materials processing operations are subject to this subpart.

(h) Nuisance dust collectors on lime coolers are part of the lime materials processing operations and are not covered by this subpart.

(i) Lime hydrators are not subject to this subpart.

(j) Open material storage piles are not subject to this subpart.

§ 63.7083 When do I have to comply with this subpart?

(a) If you have a new affected source, you must comply with this subpart according to paragraphs (a)(1) and (2) of this section.

(1) If you start up your affected source before January 5, 2004, you must comply with the emission limitations no later than January 5, 2004, and you must have completed all applicable performance tests no later than July 5, 2004.

(2) If you start up your affected source after January 5, 2004, then you must comply with the emission limitations for new affected sources upon startup of your affected source and you must have completed all applicable performance tests no later than 180 days after startup.

(b) If you have an existing affected source, you must comply with the applicable emission limitations for the existing affected source, and you must have completed all applicable performance tests no later than January 5, 2007.

(c) If you have an LMP that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the deadlines specified in paragraphs (c)(1) and (2) of this section apply.

(1) New affected sources at your LMP you must be in compliance with this subpart upon startup.

(2) Existing affected sources at your LMP must be in compliance with this subpart within 3 years after your source becomes a major source of HAP.

(d) You must meet the notification requirements in § 63.7130 according to the schedule in § 63.7130 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limitations in this subpart.

Emission Limitations

§ 63.7090 What emission limitations must I meet?

(a) You must meet each emission limit in Table 1 to this subpart that applies to you.

(b) You must meet each operating limit in Table 2 to this subpart that applies to you.

General Compliance Requirements

§ 63.7100 What are my general requirements for complying with this subpart?

(a) After your initial compliance date, you must be in compliance with the emission limitations (including operating limits) in this subpart at all times, except during periods of startup, shutdown, and malfunction.

(b) You must be in compliance with the opacity and visible emission (VE) limits in this subpart during the times specified in § 63.6(h)(1).

(c) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in § 63.6(e)(1)(i).

(d) You must prepare and implement for each LMP, a written operations, maintenance, and monitoring (OM&M) plan. You must submit the plan to the applicable permitting authority for review and approval as part of the application for a 40 CFR part 70 or 40 CFR part 71 permit. Any subsequent changes to the plan must be submitted to the applicable permitting authority for review and approval. Pending

approval by the applicable permitting authority of an initial or amended plan, you must comply with the provisions of the submitted plan. Each plan must contain the following information:

(1) Process and control device parameters to be monitored to determine compliance, along with established operating limits or ranges, as applicable, for each emission unit.

(2) A monitoring schedule for each emission unit.

(3) Procedures for the proper operation and maintenance of each emission unit and each air pollution control device used to meet the applicable emission limitations and operating limits in Tables 1 and 2 to this subpart, respectively.

(4) Procedures for the proper installation, operation, and maintenance of monitoring devices or systems used to determine compliance, including:

(i) Calibration and certification of accuracy of each monitoring device;

(ii) Performance and equipment specifications for the sample interface, parametric signal analyzer, and the data collection and reduction systems;

(iii) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1), (3), and (4)(ii); and

(iv) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d).

(5) Procedures for monitoring process and control device parameters.

(6) Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the operating limits specified in Table 2 to this subpart, including:

(i) Procedures to determine and record the cause of a deviation or excursion, and the time the deviation or excursion began and ended; and

(ii) Procedures for recording the corrective action taken, the time corrective action was initiated, and the time and date the corrective action was completed.

(7) A maintenance schedule for each emission unit and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

(e) You must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in § 63.6(e)(3).

Testing and Initial Compliance Requirements

§ 63.7110 By what date must I conduct performance tests and other initial compliance demonstrations?

(a) If you have an existing affected source, you must complete all applicable performance tests within January 5, 2007, according to the provisions in §§ 63.7(a)(2) and 63.7114.

(b) If you have a new affected source, and commenced construction or reconstruction between December 20, 2002, and January 5, 2004, you must demonstrate initial compliance with either the proposed emission limitation or the promulgated emission limitation no later than 180 calendar days after January 5, 2004 or within 180 calendar days after startup of the source, whichever is later, according to §§ 63.7(a)(2)(ix) and 63.7114.

(c) If you commenced construction or reconstruction between December 20, 2002, and January 5, 2004, and you chose to comply with the proposed emission limitation when demonstrating initial compliance, you must conduct a demonstration of compliance with the promulgated emission limitation within January 5, 2007 or after startup of the source, whichever is later, according to §§ 63.7(a)(2)(ix) and 63.7114.

(d) For each initial compliance requirement in Table 3 to this subpart that applies to you where the monitoring averaging period is 3 hours, the 3-hour period for demonstrating continuous compliance for emission units within existing affected sources at LMP begins at 12:01 a.m. on the compliance date for existing affected sources, that is, the day following completion of the initial compliance demonstration, and ends at 3:01 a.m. on the same day.

(e) For each initial compliance requirement in Table 3 to this subpart that applies to you where the monitoring averaging period is 3 hours, the 3-hour period for demonstrating continuous compliance for emission units within new or reconstructed affected sources at LMP begins at 12:01 a.m. on the day following completion of the initial compliance demonstration, as required in paragraphs (b) and (c) of this section, and ends at 3:01 a.m. on the same day.

§ 63.7111 When must I conduct subsequent performance tests?

You must conduct a performance test within 5 years following the initial performance test and within 5 years following each subsequent performance test thereafter.

§ 63.7112 What performance tests, design evaluations, and other procedures must I use?

- (a) You must conduct each performance test in Table 4 to this subpart that applies to you.
- (b) Each performance test must be conducted according to the requirements in § 63.7(e)(1) and under the specific conditions specified in Table 4 to this subpart.
- (c) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 63.7(e)(1).
- (d) Except for opacity and VE observations, you must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour.
- (e) The emission rate of particulate matter (PM) from each lime kiln (and each lime cooler if there is a separate exhaust to the atmosphere from the lime cooler) must be computed for each run using Equation 1 of this section:

$$E = (C_k Q_k + C_c Q_c) / PK \quad (\text{Eq. 1})$$

Where:

E = Emission rate of PM, pounds per ton (lb/ton) of stone feed.

C_k = Concentration of PM in the kiln effluent, grain/dry standard cubic feet (gr/dscf).

Q_k = Volumetric flow rate of kiln effluent gas, dry standard cubic feet per hour (dscf/hr).

C_c = Concentration of PM in the cooler effluent, grain/dscf. This value is zero if there is not a separate cooler exhaust to the atmosphere.

Q_c = Volumetric flow rate of cooler effluent gas, dscf/hr. This value is zero if there is not a separate cooler exhaust to the atmosphere.

P = Stone feed rate, tons per hour (ton/hr).

K = Conversion factor, 7000 grains per pound (grains/lb).

(f)(1) If you choose to meet a weighted average emission limit as specified in item 4 of Table 1 to this subpart, you must calculate a combined particulate emission rate from all kilns and coolers within your LMP using Equation 2 of this section:

$$E_T = \sum_{i=1}^n E_i P_i / \sum_{i=1}^n P_i \quad (\text{Eq. 2})$$

Where:

E_T = Emission rate of PM from all kilns and coolers, lb/ton of stone feed.

E_i = Emission rate of PM from kiln i , or from kiln/cooler combination i , lb/ton of stone feed.

P_i = Stone feed rate to kiln i , ton/hr.

n = Number of kilns you wish to include in averaging.

(2) You do not have to include every kiln in this calculation, only include kilns you wish to average. Kilns that have a PM emission limit of 0.60 lb/tsf are ineligible for any averaging.

(g) The weighted average PM emission limit from all kilns and coolers for which you are averaging must be calculated using Equation 3 of this section:

$$E_{TN} = \sum_{j=1}^m E_j P_j / \sum_{j=1}^m P_j \quad (\text{Eq. 3})$$

Where:

E_{TN} = Weighted average PM emission limit for all kilns and coolers being included in averaging at the LMP, lb/ton of stone feed.

E_j = PM emission limit (0.10 or 0.12) for kiln j , or for kiln/cooler combination j , lb/ton of stone feed.

P_j = Stone feed rate to kiln j , ton/hr.

m = Number of kilns and kiln/cooler combinations you are averaging at your LMP. You must include the same kilns in the calculation of E_T and E_{TN} . Kilns that have a PM emission limit of 0.60 lb/tsf are ineligible for any averaging.

(h) Performance test results must be documented in complete test reports that contain the information required by paragraphs (h)(1) through (10) of this section, as well as all other relevant information. The plan to be followed during testing must be made available to the Administrator at least 60 days prior to testing.

(1) A brief description of the process and the air pollution control system;

(2) Sampling location description(s);

(3) A description of sampling and analytical procedures and any modifications to standard procedures;

(4) Test results, including opacity;

(5) Quality assurance procedures and results;

(6) Records of operating conditions during the test, preparation of standards, and calibration procedures;

(7) Raw data sheets for field sampling and field and laboratory analyses;

(8) Documentation of calculations;

(9) All data recorded and used to establish operating limits; and

(10) Any other information required by the test method.

(i) [Reserved]

(j) You must establish any applicable 3-hour block average operating limit indicated in Table 2 to this subpart according to the applicable requirements in Table 3 to this subpart and paragraphs (j)(1) through (4) of this section.

(1) Continuously record the parameter during the PM performance test and include the parameter record(s) in the performance test report.

(2) Determine the average parameter value for each 15-minute period of each test run.

(3) Calculate the test run average for the parameter by taking the average of all the 15-minute parameter values for the run.

(4) Calculate the 3-hour operating limit by taking the average of the three test run averages.

(k) For each building enclosing any PSH operations that is subject to a VE limit, you must conduct a VE check according to item 18 in Table 4 to this subpart, and in accordance with paragraphs (k)(1) through (3) of this section.

(1) Conduct visual inspections that consist of a visual survey of the building over the test period to identify if there are VE, other than condensed water vapor.

(2) Select a position at least 15 but not more 1,320 feet from each side of the building with the sun or other light source generally at your back.

(3) The observer conducting the VE checks need not be certified to conduct EPA Method 9 in appendix A to part 60 of this chapter, but must meet the training requirements as described in EPA Method 22 in appendix A to part 60 of this chapter.

(l) When determining compliance with the opacity standards for fugitive emissions from PSH operations in item 7 of Table 1 to this subpart, you must conduct EPA Method 9 in appendix A to part 60 of this chapter according to item 17 in Table 4 to this subpart, and in accordance with paragraphs (l)(1) through (3) of this section.

(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). The required observer position relative to the sun must be followed.

(3) If you use wet dust suppression to control PM from PSH operations, 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 VE. When a water mist of this nature is present, you must observe emissions at a point in the plume where the mist is no longer visible.

§ 63.7113 What are my monitoring installation, operation, and maintenance requirements?

(a) You must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to your OM&M plan required by § 63.7100(d) and paragraphs (a)(1) through (5) of this section, and you must install, operate, and maintain each continuous opacity monitoring system (COMS) as required by paragraph (g) of this section.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period.

(2) To calculate a valid hourly value, you must have at least four equally spaced data values (or at least two, if that condition is included to allow for periodic calibration checks) for that hour from a CPMS that is not out of control according your OM&M plan, and use all valid data.

(3) To calculate the average for each 3-hour block averaging period, you must use all valid data, and you must have at least 66 percent of the hourly averages for that period using only hourly average values that are based on valid data (*i.e.*, not from out-of-control periods).

(4) You must conduct a performance evaluation of each CPMS in accordance with your OM&M plan.

(5) You must continuously operate and maintain the CPMS according to the OM&M plan, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(b) For each flow measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (b)(1) through (4) of this section.

(1) Use a flow sensor with a minimum tolerance of 2 percent of the flow rate.

(2) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(3) Conduct a flow sensor calibration check at least semiannually.

(4) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(c) For each pressure measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (c)(1) through (7) of this section.

(1) Locate the pressure sensor(s) in or as close to as possible a position that provides a representative measurement of the pressure.

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(3) Use a gauge with a minimum tolerance of 0.5 inch of water or a

transducer with a minimum tolerance of 1 percent of the pressure range.

(4) Check pressure tap pluggage daily.

(5) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(6) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range or install a new pressure sensor.

(7) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(d) For each bag leak detection system (BLDS), you must meet any applicable requirements in paragraphs (a)(1) through (5) and (d)(1) through (8) of this section.

(1) The BLDS must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The sensor on the BLDS must provide output of relative PM emissions.

(3) The BLDS must have an alarm that will sound automatically when it detects an increase in relative PM emissions greater than a preset level.

(4) The alarm must be located in an area where appropriate plant personnel will be able to hear it.

(5) For a positive-pressure fabric filter (FF), each compartment or cell must have a bag leak detector (BLD). For a negative-pressure or induced-air FF, the BLD must be installed downstream of the FF. If multiple BLD are required (for either type of FF), the detectors may share the system instrumentation and alarm.

(6) Bag leak detection systems must be installed, operated, adjusted, and maintained according to the manufacturer's written specifications and recommendations. Standard operating procedures must be incorporated into the OM&M plan.

(7) At a minimum, initial adjustment of the system must consist of establishing the baseline output in both of the following ways:

(i) Adjust the range and the averaging period of the device.

(ii) Establish the alarm set points and the alarm delay time.

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the OM&M plan required by § 63.7100(d). In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 365-day period unless a responsible official as defined in § 63.2 certifies in writing to the Administrator that the ESP has been inspected and found to be in good operating condition.

(f) For each emission unit equipped with an add-on air pollution control device, you must inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating

(e) For each PM detector, you must meet any applicable requirements in paragraphs (a)(1) through (5) and (e)(1) through (8) of this section.

(1) The PM detector must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The sensor on the PM detector must provide output of relative PM emissions.

(3) The PM detector must have an alarm that will sound automatically when it detects an increase in relative PM emissions greater than a preset level.

(4) The alarm must be located in an area where appropriate plant personnel will be able to hear it.

(5) For a positive-pressure electrostatic precipitator (ESP), each compartment must have a PM detector. For a negative-pressure or induced-air ESP, the PM detector must be installed downstream of the ESP. If multiple PM detectors are required (for either type of ESP), the detectors may share the system instrumentation and alarm.

(6) Particulate matter detectors must be installed, operated, adjusted, and maintained according to the manufacturer's written specifications and recommendations. Standard operating procedures must be incorporated into the OM&M plan.

(7) At a minimum, initial adjustment of the system must consist of establishing the baseline output in both of the following ways:

(i) Adjust the range and the averaging period of the device.

(ii) Establish the alarm set points and the alarm delay time.

(8) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the OM&M plan required by § 63.7100(d). In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 365-day period unless a responsible official as defined in § 63.2 certifies in writing to the Administrator that the ESP has been inspected and found to be in good operating condition.

(f) For each emission unit equipped with an add-on air pollution control device, you must inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating

requirements in item 6 of Table 2 to this subpart and record the results of each inspection.

(g) For each COMS used to monitor an add-on air pollution control device, you must meet the requirements in paragraphs (g)(1) and (2) of this section.

(1) Install the COMS at the outlet of the control device.

(2) Install, maintain, calibrate, and operate the COMS as required by 40 CFR part 63, subpart A, General Provisions and according to Performance Specification (PS)-1 of appendix B to part 60 of this chapter. Facilities that operate COMS installed on or before February 6, 2001, may continue to meet the requirements in effect at the time of COMS installation unless specifically required to re-certify the COMS by their permitting authority.

§ 63.7114 How do I demonstrate initial compliance with the emission limitations standard?

(a) You must demonstrate initial compliance with each emission limit in Table 1 to this subpart that applies to you, according to Table 3 to this subpart. For existing lime kilns and their associated coolers, you may perform VE measurements in accordance with EPA Method 9 of appendix A to part 60 in lieu of installing a COMS or PM detector if any of the conditions in paragraphs (a)(1) through (3) of this section exist:

(1) You use a FF for PM control, and the FF is under positive pressure and has multiple stacks; or

(2) The control device exhausts through a monovent; or

(3) The installation of a COMS in accordance with PS-1 of appendix B to part 60 is infeasible.

(b) You must establish each site-specific operating limit in Table 2 to this subpart that applies to you according to the requirements in § 63.7112(j) and Table 4 to this subpart. Alternative parameters may be monitored if approval is obtained according to the procedures in § 63.8(f).

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.7130(e).

Continuous Compliance Requirements

§ 63.7120 How do I monitor and collect data to demonstrate continuous compliance?

(a) You must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required quality assurance or control activities (including, as applicable, calibration

checks and required zero adjustments), and except for PSH operations subject to monthly VE testing, you must monitor continuously (or collect data at all required intervals) at all times that the emission unit is operating.

(c) Data recorded during the conditions described in paragraphs (c)(1) through (3) of this section may not be used either in data averages or calculations of emission or operating limits; or in fulfilling a minimum data availability requirement. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(1) Monitoring system breakdowns, repairs, preventive maintenance, calibration checks, and zero (low-level) and high-level adjustments;

(2) Periods of non-operation of the process unit (or portion thereof), resulting in cessation of the emissions to which the monitoring applies; and

(3) Start-ups, shutdowns, and malfunctions.

§ 63.7121 How do I demonstrate continuous compliance with the emission limitations standard?

(a) You must demonstrate continuous compliance with each emission limitation in Tables 1 and 2 to this subpart that applies to you according to the methods specified in Tables 5 and 6 to this subpart.

(b) You must report each instance in which you did not meet each operating limit, opacity limit, and VE limit in Tables 2 and 6 to this subpart that applies to you. This includes periods of startup, shutdown, and malfunction. These instances are deviations from the emission limitations in this subpart. These deviations must be reported according to the requirements in § 63.7131.

(c) You must operate in accordance with the SSMP during periods of startup, shutdown, and malfunction.

(d) Consistent with §§ 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the SSMP. The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in § 63.6(e).

(e) For each PSH operation subject to an opacity limit as specified in Table 1 to this subpart, and any vents from buildings subject to an opacity limit, you must conduct a VE check according

to item 1 in Table 6 to this subpart, and as follows:

(1) Conduct visual inspections that consist of a visual survey of each stack or process emission point over the test period to identify if there are VE, other than condensed water vapor.

(2) Select a position at least 15 but not more 1,320 feet from the affected emission point with the sun or other light source generally at your back.

(3) The observer conducting the VE checks need not be certified to conduct EPA Method 9 in appendix A to part 60 of this chapter, but must meet the training requirements as described in EPA Method 22 of appendix A to part 60 of this chapter.

(f) For existing lime kilns and their associated coolers, you may perform VE measurements in accordance with EPA Method 9 of appendix A to part 60 in lieu of installing a COMS or PM detector if any of the conditions in paragraphs (f)(1) or (3) of this section exist:

(1) You use a FF for PM control, and the FF is under positive pressure and has multiple stacks; or

(2) The control device exhausts through a monovent; or

(3) The installation of a COMS in accordance with PS-1 of appendix B to part 60 is infeasible.

Notification, Reports, and Records

§ 63.7130 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.6(h)(4) and (5); 63.7(b) and (c); 63.8(e); (f)(4) and (6); and 63.9 (a) through (j) that apply to you, by the dates specified.

(b) As specified in § 63.9(b)(2), if you start up your affected source before January 5, 2004, you must submit an initial notification not later than 120 calendar days after January 5, 2004.

(c) If you startup your new or reconstructed affected source on or after January 5, 2004, you must submit an initial notification not later than 120 calendar days after you start up your affected source.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin, as required in § 63.7(b)(1).

(e) If you are required to conduct a performance test, design evaluation, opacity observation, VE observation, or other initial compliance demonstration as specified in Table 3 or 4 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 3 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the initial compliance demonstration.

(2) For each compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 4 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to § 63.10(d)(2).

§ 63.7131 What reports must I submit and when?

(a) You must submit each report listed in Table 7 to this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date specified in Table 7 to this subpart and according to the requirements in paragraphs (b)(1) through (5) of this section:

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.7083 and ending on June 30 or December 31, whichever date is the first date following the end of the first half calendar year after the compliance date that is specified for your source in § 63.7083.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first half calendar year after the compliance date that is specified for your affected source in § 63.7083.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each affected source that is subject to permitting regulations pursuant to part 70 or part 71 of this chapter, if the permitting authority has established dates for submitting semiannual reports pursuant to

§§ 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A) of this chapter, you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates specified in paragraphs (b)(1) through (4) of this section.

(c) The compliance report must contain the information specified in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown or malfunction during the reporting period and you took actions consistent with your SSMP, the compliance report must include the information in § 63.10(d)(5)(i).

(5) If there were no deviations from any emission limitations (emission limit, operating limit, opacity limit, and VE limit) that apply to you, the compliance report must include a statement that there were no deviations from the emission limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring systems (CMS) were out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS were out-of-control during the reporting period.

(d) For each deviation from an emission limitation (emission limit, operating limit, opacity limit, and VE limit) that occurs at an affected source where you are not using a CMS to comply with the emission limitations in this subpart, the compliance report must contain the information specified in paragraphs (c)(1) through (4) and (d)(1) and (2) of this section. The deviations must be reported in accordance with the requirements in § 63.10(d).

(1) The total operating time of each emission unit during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission limitation (emission limit, operating limit, opacity limit, and VE limit) occurring at an affected source where you are using a CMS to comply with the emission limitation in this subpart, you must include the information specified in paragraphs

(c)(1) through (4) and (e)(1) through (11) of this section. This includes periods of startup, shutdown, and malfunction.

(1) The date and time that each malfunction started and stopped.

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(5) A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total affected source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period and the total duration of CMS downtime as a percent of the total emission unit operating time during that reporting period.

(8) A brief description of the process units.

(9) A brief description of the CMS.

(10) The date of the latest CMS certification or audit.

(11) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each facility that has obtained a title V operating permit pursuant to part 70 or part 71 of this chapter must report all deviations as defined in this subpart in the semiannual monitoring report required by §§ 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A) of this chapter. If you submit a compliance report specified in Table 7 to this subpart along with, or as part of, the semiannual monitoring report required by §§ 70.6(a)(3)(iii)(A) or 71.6(a)(3)(iii)(A) of this chapter, and the compliance report includes all required information concerning deviations from any emission limitation (including any operating limit), submission of the compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report shall not otherwise affect any obligation you may have to report deviations from permit requirements to the permit authority.

§ 63.7132 What records must I keep?

(a) You must keep the records specified in paragraphs (a)(1) through (3) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) The records in § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests, performance evaluations, and opacity and VE observations as required in § 63.10(b)(2)(viii).

(b) You must keep the records in § 63.6(h)(6) for VE observations.

(c) You must keep the records required by Tables 5 and 6 to this subpart to show continuous compliance with each emission limitation that applies to you.

(d) You must keep the records which document the basis for the initial applicability determination as required under § 63.7081.

§ 63.7133 In what form and for how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record,

according to § 63.10(b)(1). You may keep the records offsite for the remaining 3 years.

Other Requirements and Information**§ 63.7140 What parts of the General Provisions apply to me?**

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. When there is overlap between subpart A and subpart AAAA, as indicated in the "Explanations" column in Table 8, subpart AAAA takes precedence.

§ 63.7141 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. EPA, or by a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are as specified in paragraphs (c)(1) through (6) of this section.

(1) Approval of alternatives to the non-opacity emission limitations in § 63.7090(a).

(2) Approval of alternative opacity emission limitations in § 63.7090(a).

(3) Approval of alternatives to the operating limits in § 63.7090(b).

(4) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(5) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(6) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

§ 63.7142 What are the requirements for claiming area source status?

(a) If you wish to claim that your LMP is an area source, you must measure the emissions of hydrogen chloride from all lime kilns, except as provided in paragraph (c) of this section, at your plant using either:

(1) EPA Method 320 of appendix A to this part,

(2) EPA Method 321 of appendix A to this part, or

(3) ASTM Method D6735-01, Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, provided that the provisions in paragraphs (a)(3)(i) through (vi) of this section are followed.

(i) A test must include three or more runs in which a pair of samples is obtained simultaneously for each run according to section 11.2.6 of ASTM Method D6735-01.

(ii) You must calculate the test run standard deviation of each set of paired samples to quantify data precision, according to Equation 1 of this section:

$$RSD_a = (100) \text{ Absolute Value} \left[\frac{C1_a - C2_a}{C1_a + C2_a} \right]$$

(Eq. 1)

Where:

RSD_a = The test run relative standard deviation of sample pair a, percent. C_{1a} and C_{2a} = The HCl concentrations, milligram/dry standard cubic meter(mg/dscm), from the paired samples.

(iii) You must calculate the test average relative standard deviation according to Equation 2 of this section:

$$RSD_{TA} = \frac{\sum_{a=1}^p RSD_a}{p} \quad (\text{Eq. 2})$$

Where:

RSD_{TA} = The test average relative standard deviation, percent.

RSD_a = The test run relative standard deviation for sample pair a.

p = The number of test runs, ≥ 3 .

(iv) If RSD_{TA} is greater than 20 percent, the data are invalid and the test must be repeated.

(v) The post-test analyte spike procedure of section 11.2.7 of ASTM Method D6735-01 is conducted, and the percent recovery is calculated according to section 12.6 of ASTM Method D6735-01.

(vi) If the percent recovery is between 70 percent and 130 percent, inclusive,

the test is valid. If the percent recovery is outside of this range, the data are considered invalid, and the test must be repeated.

(b) If you conduct tests to determine the rates of emission of specific organic HAP from lime kilns at LMP for use in applicability determinations under § 63.7081, you may use either:

(1) Method 320 of appendix A to this part, or

(2) Method 18 of appendix A to part 60 of this chapter, or

(3) ASTM D6420-99, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass

Spectrometry (GC/MS), provided that the provisions of paragraphs (b)(3)(i) through (iv) of this section are followed:

- (i) The target compound(s) are those listed in section 1.1 of ASTM D6420-99;
- (ii) The target concentration is between 150 parts per billion by volume and 100 parts per million by volume;
- (iii) For target compound(s) not listed in Table 1.1 of ASTM D6420-99, but potentially detected by mass spectrometry, the additional system continuing calibration check after each run, as detailed in section 10.5.3 of ASTM D6420-99, is conducted, met, documented, and submitted with the data report, even if there is no moisture condenser used or the compound is not considered water soluble; and
- (iv) For target compound(s) not listed in Table 1.1 of ASTM D6420-99, and not amenable to detection by mass spectrometry, ASTM D6420-99 may not be used.

(c) It is left to the discretion of the permitting authority whether or not idled kilns must be tested for (HCl) to claim area source status. If the facility has kilns that use common feed materials and fuel, are essentially identical in design, and use essentially identical emission controls, the permitting authority may also determine if one kiln can be tested, and the HCl emissions for the other essentially identical kilns be estimated from that test.

§ 63.7143 What definitions apply to this subpart?

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

Bag leak detector system (BLDS) is a type of PM detector used on FF to identify an increase in PM emissions resulting from a broken filter bag or other malfunction and sound an alarm.

Belt conveyor means a conveying device that transports *processed stone* 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 *processed stone* conveying device 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.

Capture system means the equipment (including enclosures, hoods, ducts, fans, dampers, *etc.*) used to capture and transport PM to a control device.

Control device means the air pollution control equipment used to reduce PM emissions released to the atmosphere

from one or more process operations at an LMP.

Conveying system means a device for transporting *processed stone* from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to feeders, belt conveyors, bucket elevators and pneumatic systems.

Deviation means any instance in which an affected source, subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation (including any operating limit);

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation (including any operating limit) in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is allowed by this subpart.

Emission limitation means any emission limit, opacity limit, operating limit, or VE limit.

Emission unit means a lime kiln, lime cooler, storage bin, conveying system transfer point, bulk loading or unloading operation, bucket elevator or belt conveyor at an LMP.

Fugitive emission means PM that is not collected by a capture system.

Hydrator means the device used to produce hydrated lime or calcium hydroxide via the chemical reaction of the lime product with water.

Lime cooler means the device external to the lime kiln (or part of the lime kiln itself) used to reduce the temperature of the lime produced by the kiln.

Lime kiln means the device, including any associated preheater, used to produce a lime product from stone feed by calcination. Kiln types include, but are not limited to, rotary kiln, vertical kiln, rotary hearth kiln, double-shaft vertical kiln, and fluidized bed kiln.

Lime manufacturing plant (LMP) means any plant which uses a lime kiln to produce lime product from limestone or other calcareous material by calcination.

Lime product means the product of the lime kiln calcination process including, calcitic lime, dolomitic lime, and dead-burned dolomite.

Limestone means the material comprised primarily of calcium carbonate (referred to sometimes as

calcitic or high calcium limestone), magnesium carbonate, and/or the double carbonate of both calcium and magnesium (referred to sometimes as dolomitic limestone or dolomite).

Monovent means an exhaust configuration of a building or emission control device (*e.g.*, positive pressure FF) that extends the length of the structure and has a width very small in relation to its length (*i.e.*, length-to-width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features.

Particulate matter (PM) detector means a system that is continuously capable of monitoring PM loading in the exhaust of FF or ESP in order to detect bag leaks, upset conditions, or control device malfunctions and sounds an alarm at a preset level. A PM detector system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effects to continuously monitor relative particulate loadings. A BLDS is a type of PM detector.

Positive pressure FF or ESP means a FF or ESP with the fan(s) on the upstream side of the control device.

Process stone handling operations means the equipment and transfer points between the equipment used to transport *processed stone*, and includes, storage bins, conveying system transfer points, bulk loading or unloading systems, screening operations, bucket elevators, and belt conveyors.

Processed stone means limestone or other calcareous material that has been processed to a size suitable for feeding into a lime kiln.

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).

Stack emissions means the PM that is released to the atmosphere from a capture system or control device.

Storage bin means a manmade enclosure for storage (including surge bins) of *processed stone* prior to the lime kiln.

Transfer point means a point in a conveying operation where the material is transferred to or from a belt conveyor.

Vent means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying PM emissions from one or more emission units.

TABLE 1 TO SUBPART AAAAA OF PART 63.—EMISSION LIMITS

[As required in § 63.7090(a), you must meet each emission limit in the following table that applies to you.]

For . . .	You must meet the following emission limit
1. Existing lime kilns and their associated lime coolers that did not have a wet scrubber installed and operating prior to January 5, 2004.	PM emissions must not exceed 0.12 pounds per ton of stone feed (lb/tsf).
2. Existing lime kilns and their associated lime coolers that have a wet scrubber, where the scrubber itself was installed and operating prior to January 5, 2004.	PM emissions must not exceed 0.60 lb/tsf. If at any time after January 5, 2004 the kiln changes to a dry control system, then the PM emission limit in item 1 of this Table 1 applies, and the kiln is hereafter ineligible for the PM emission limit in item 2 of this Table 1 regardless of the method of PM control.
3. New lime kilns and their associated lime coolers	PM emissions must not exceed 0.10 lb/tsf.
4. All existing and new lime kilns and their associated coolers at your LMP, and you choose to average PM emissions, except that any kiln that is allowed to meet the 0.60 lb/tsf PM emission limit is ineligible for averaging.	Weighted average PM emissions calculated according to Eq. 2 in § 63.7112 must not exceed 0.12 lb/tsf (if you are averaging only existing kilns) or 0.10 lb/tsf (if you are averaging only new kilns). If you are averaging existing and new kilns, your weighted average PM emissions must not exceed the weighted average emission limit calculated according to Eq. 3 in § 63.7112, except that no new kiln and its associated cooler considered alone may exceed an average PM emissions limit of 0.10 lb/tsf.
5. Stack emissions from all PSH operations at a new or existing affected source.	PM emissions must not exceed 0.05 grams per dry standard cubic meter (g/dscm).
6. Stack emissions from all PSH operations at a new or existing affected source, unless the stack emissions are discharged through a wet scrubber control device.	Emissions must not exceed 7 percent opacity.
7. Fugitive emissions from all PSH operations at a new or existing affected source, except as provided by item 8 of this Table 1.	Emissions must not exceed 10 percent opacity.
8. All PSH operations at a new or existing affected source enclosed in a building.	All of the individually affected PSH operations must comply with the applicable PM and opacity emission limitations in items 5 through 7 of this Table 1, or the building must comply with the following: There must be no VE from the building, except from a vent; and vent emissions must not exceed the stack emissions limitations in items 5 and 6 of this Table 1.
9. Each FF that controls emissions from only an individual, enclosed storage bin.	Emissions must not exceed 7 percent opacity.
10. Each set of multiple storage bins at a new or existing affected source, with combined stack emissions.	You must comply with the emission limits in items 5 and 6 of this Table 1.

TABLE 2 TO SUBPART AAAAA OF PART 63.—OPERATING LIMITS

[As required in § 63.7090(b), you must meet each operating limit in the following table that applies to you.]

For . . .	You must . . .
1. Each lime kiln and each lime cooler (if there is a separate exhaust to the atmosphere from the associated lime cooler) equipped with an FF.	Maintain and operate the FF such that the BLDS or PM detector alarm condition does not exist for more than 5 percent of the total operating time in a 6-month period; and comply with the requirements in § 63.7113(d) through (f) and Table 5 to this subpart. In lieu of a BLDS or PM detector maintain the FF such that the 6-minute average opacity for any 6-minute block period does not exceed 15 percent; and comply with the requirements in § 63.7113(f) and (g) and Table 5 to this subpart.
2. Each lime kiln equipped with a wet scrubber	Maintain the 3-hour block exhaust gas stream pressure drop across the wet scrubber greater than or equal to the pressure drop operating limit established during the most recent PM performance test; and maintain the 3-hour block scrubbing liquid flow rate greater than the flow rate operating limit established during the most recent performance test.
3. Each lime kiln equipped with an electrostatic precipitator	Install a PM detector and maintain and operate the ESP such that the PM detector alarm is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month period, and comply with § 63.7113(e); or, maintain the ESP such that the 6-minute average opacity for any 6-minute block period does not exceed 15 percent, and comply with the requirements in § 63.7113(g); and comply with the requirements in § 63.7113(f) and Table 5 to this subpart.
4. Each PSH operation subject to a PM limit which uses a wet scrubber.	Maintain the 3-hour block average exhaust gas stream pressure drop across the wet scrubber greater than or equal to the pressure drop operating limit established during the PM performance test; and maintain the 3-hour block average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the performance test.

TABLE 2 TO SUBPART AAAAA OF PART 63.—OPERATING LIMITS—Continued

[As required in § 63.7090(b), you must meet each operating limit in the following table that applies to you.]

For . . .	You must . . .
5. All affected sources	Prepare a written OM&M plan; the plan must include the items listed in § 63.7100(d) and the corrective actions to be taken when required in Table 5 to this subpart.
6. Each emission unit equipped with an add-on air pollution control device.	<p>a. Vent captured emissions through a closed system, except that dilution air may be added to emission streams for the purpose of controlling temperature at the inlet to an FF; and</p> <p>b. Operate each capture/collection system according to the procedures and requirements in the OM&M plan.</p>

TABLE 3 TO SUBPART AAAAA OF PART 63.—INITIAL COMPLIANCE WITH EMISSION LIMITS

[As required in § 63.7114, you must demonstrate initial compliance with each emission limitation that applies to you, according to the following table.]

For . . .	For the following emission limit . . .	You have demonstrated initial compliance, if after following the requirements in § 63.7112 . . .
1. All new or existing lime kilns and their associated lime coolers (kilns/coolers).	PM emissions must not exceed 0.12 lb/tsf for all existing kilns/coolers with dry controls, 0.60 lb/tsf for existing kilns/coolers with wet scrubbers, 0.10 lb/tsf for all new kilns/coolers, or a weighted average calculated according to Eq. 3 in § 63.7112.	The kiln outlet PM emissions (and if applicable, summed with the separate cooler PM emissions), based on the PM emissions measured using Method 5 in appendix A to part 60 of this chapter and the stone feed rate measurement over the period of initial performance test, do not exceed the emission limit; if the lime kiln is controlled by an FF or ESP and you are opting to monitor PM emissions with a BLDS or PM detector, you have installed and are operating the monitoring device according to the requirements in § 63.7113(d) or (e), respectively; and if the lime kiln is controlled by an FF or ESP and you are opting to monitor PM emissions using a COMS, you have installed and are operating the COMS according to the requirements in § 63.7113(g).
2. Stack emissions from all PHS operations at a new or existing affected source.	PM emissions must not exceed 0.05 g/dscm ..	The outlet PM emissions, based on Method 5 or Method 17 in appendix A to part 60 of this chapter, over the period of the initial performance test do not exceed 0.05 g/dscm; and if the emission unit is controlled with a wet scrubber, you have a record of the scrubber's pressure drop and liquid flow rate operating parameters over the 3-hour performance test during which emissions did not exceed the emissions limitation.
3. Stack emissions from all PSH operations at a new or existing affected source, unless the stack emissions are discharged through a wet scrubber control device.	Emissions must not exceed 7 percent opacity	Each of the thirty 6-minute opacity averages during the initial compliance period, using Method 9 in appendix A to part 60 of this chapter, does not exceed the 7 percent opacity limit. At least thirty 6-minute averages must be obtained.
4. Fugitive emissions from all PSH operations at a new or existing affected source.	Emissions must not exceed 10 percent opacity.	Each of the 6-minute opacity averages during the initial compliance period, using Method 9 in appendix A to part 60 of this chapter, does not exceed the 10 percent opacity limit.
5. All PSH operations at a new or existing affected source, enclosed in building.	All of the individually affected PSH operations must comply with the applicable PM and opacity emission limitations for items 2 through 4 of this Table 3, or the building must comply with the following: There must be no VE from the building, except from a vent, and vent emissions must not exceed the emission limitations in items 2 and 3 of this Table 3.	All the PSH operations enclosed in the building have demonstrated initial compliance according to the applicable requirements for items 2 through 4 of this Table 3; or if you are complying with the building emission limitations, there are no VE from the building according to item 18 of Table 4 to this subpart and § 63.7112(k), and you demonstrate initial compliance with applicable building vent emissions limitations according to the requirements in items 2 and 3 of this Table 3.

TABLE 3 TO SUBPART AAAAA OF PART 63.—INITIAL COMPLIANCE WITH EMISSION LIMITS—Continued

[As required in § 63.7114, you must demonstrate initial compliance with each emission limitation that applies to you, according to the following table.]

For . . .	For the following emission limit . . .	You have demonstrated initial compliance, if after following the requirements in § 63.7112 . . .
6. Each FF that controls emissions from only an individual storage bin.	Emissions must not exceed 7 percent opacity	Each of the ten 6-minute averages during the 1-hour initial compliance period, using Method 9 in appendix A to part 60 of this chapter, does not exceed the 7 percent opacity limit.
7. Each set of multiple storage bins with combined stack emissions.	You must comply with emission limitations in items 2 and 3 of this Table 3.	You demonstrate initial compliance according to the requirements in items 2 and 3 of this Table 3.

TABLE 4 TO SUBPART AAAAA OF PART 63.—REQUIREMENTS FOR PERFORMANCE TESTS

[As required in § 63.7112, you must conduct each performance test in the following table that applies to you.]

For . . .	You must . . .	Using . . .	According to the following requirements . . .
1. Each lime kiln and each associated lime cooler, if there is a separate exhaust to the atmosphere from the associated lime cooler.	Select the location of the sampling port and the number of traverse ports.	Method 1 or 1A of appendix A to part 60 of this chapter; and § 63.6(d)(1)(i).	Sampling sites must be located at the outlet of the control device(s) and prior to any releases to the atmosphere.
2. Each lime kiln and each associated lime cooler, if there is a separate exhaust to the atmosphere from the associated lime cooler.	Determine velocity and volumetric flow rate.	Method 2, 2A, 2C, 2D, 2F, or 2G in appendix A to part 60 of this chapter.	Not applicable.
3. Each lime kiln and each associated lime cooler, if there is a separate exhaust to the atmosphere from the associated lime cooler.	Conduct gas molecular weight analysis.	Method 3, 3A, or 3B in appendix A to part 60 of this chapter.	Not applicable.
4. Each lime kiln and each associated lime cooler, if there is a separate exhaust to the atmosphere from the associated lime cooler.	Measure moisture content of the stack gas.	Method 4 in appendix A to part 60 of this chapter.	Not applicable.
5. Each lime kiln and each associated lime cooler, if there is a separate exhaust to the atmosphere from the associated lime cooler, and which uses a negative pressure PM control device.	Measure PM emissions	Method 5 in appendix A to part 60 of this chapter.	Conduct the test(s) when the source is operating at representative operating conditions in accordance with § 63.7(e); the minimum sampling volume must be 0.85 dry standard cubic meter (dscm) (30 dry standard cubic foot (dscf)); if there is a separate lime cooler exhaust to the atmosphere, you must conduct the Method 5 test of the cooler exhaust concurrently with the kiln exhaust test.
6. Each lime kiln and each associated lime cooler, if there is a separate exhaust to the atmosphere from the associated lime cooler, and which uses a positive pressure FF or ESP.	Measure PM emissions	Method 5D in appendix A to part 60 of this chapter.	Conduct the test(s) when the source is operating at representative operating conditions in accordance with § 63.7(e); if there is a separate lime cooler exhaust to the atmosphere, you must conduct the Method 5 test of the separate cooler exhaust concurrently with the kiln exhaust test.
7. Each lime kiln	Determine the mass rate of stone feed to the kiln during the kiln PM emissions test.	Any suitable device	Calibrate and maintain the device according to manufacturer's instructions; the measuring device used must be accurate to within ± 5 percent of the mass rate of stone feed over its operating range.

TABLE 4 TO SUBPART AAAAA OF PART 63.—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

[As required in § 63.7112, you must conduct each performance test in the following table that applies to you.]

For . . .	You must . . .	Using . . .	According to the following requirements . . .
8. Each lime kiln equipped with a wet scrubber.	Establish the operating limit for the average gas stream pressure drop across the wet scrubber.	Data for the gas stream pressure drop measurement device during the kiln PM performance test.	The continuous pressure drop measurement device must be accurate within plus or minus 1 percent; you must collect the pressure drop data during the period of the performance test and determine the operating limit according to § 63.7112(j).
9. Each lime kiln equipped with a wet scrubber.	Establish the operating limit for the average liquid flow rate to the scrubber.	Data from the liquid flow rate measurement device during the kiln PM performance test.	The continuous scrubbing liquid flow rate measuring device must be accurate within plus or minus 1 percent; you must collect the flow rate data during the period of the performance test and determine the operating limit according to § 63.7112(j).
10. Each lime kiln equipped with a FF or ESP that is monitored with a PM detector.	Have installed and have operating the BLDS or PM detector prior to the performance test.	Standard operating procedures incorporated into the OM&M plan.	According to the requirements in § 63.7113(d) or (e), respectively.
11. Each lime kiln equipped with a FF or ESP that is monitored with a COMS.	Have installed and have operating the COMS prior to the performance test.	Standard operating procedures incorporated into the OM&M plan and as required by 40 CFR part 63, subpart A, General Provisions and according to PS-1 of appendix B to part 60 of this chapter, except as specified in § 63.7113(g)(2).	According to the requirements in § 63.7113(g).
12. Each stack emission from a PSH operation, vent from a building enclosing a PSH operation, or set of multiple storage bins with combined stack emissions, which is subject to a PM emission limit.	Measure PM emissions	Method 5 or Method 17 in appendix A to part 60 of this chapter.	The sample volume must be at least 1.70 dscm (60 dscf); for Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters; and if the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter (Method 17 may be used only with exhaust gas temperatures of not more than 250 °F).
13. Each stack emission from a PSH operation, vent from a building enclosing a PSH operation, or set of multiple storage bins with combined stack emissions, which is subject to an opacity limit.	Conduct opacity observations	Method 9 in appendix A to part 60 of this chapter.	The test duration must be for at least 3 hours and you must obtain at least thirty, 6-minute averages.
14. Each stack emissions source from a PSH operation subject to a PM or opacity limit, which uses a wet scrubber.	Establish the average gas stream pressure drop across the wet scrubber.	Data for the gas stream pressure drop measurement device during the PSH operation stack PM performance test.	The pressure drop measurement device must be accurate within plus or minus 1 percent; you must collect the pressure drop data during the period of the performance test and determine the operating limit according to § 63.7112(j).
15. Each stack emissions source from a PSH operation subject to a PM or opacity limit, which uses a wet scrubber.	Establish the operating limit for the average liquid flow rate to the scrubber.	Data from the liquid flow rate measurement device during the PSH operation stack PM performance test.	The continuous scrubbing liquid flow rate measuring device must be accurate within plus or minus 1 percent; you must collect the flow rate data during the period of the performance test and determine the operating limit according to § 63.7112(j).

TABLE 4 TO SUBPART AAAAA OF PART 63.—REQUIREMENTS FOR PERFORMANCE TESTS—Continued

[As required in § 63.7112, you must conduct each performance test in the following table that applies to you.]

For . . .	You must . . .	Using . . .	According to the following requirements . . .
16. Each FF that controls emissions from only an individual, enclosed, new or existing storage bin.	Conduct opacity observations	Method 9 in appendix A to part 60 of this chapter.	The test duration must be for at least 1 hour and you must obtain ten 6-minute averages.
17. Fugitive emissions from any PSH operation subject to an opacity limit.	Conduct opacity observations	Method 9 in appendix A to part 60 of this chapter.	The test duration must be for at least 3 hours, but the 3-hour test may be reduced to 1 hour if, during the first 1-hour period, there are no individual readings greater than 10 percent opacity and there are no more than three readings of 10 percent during the first 1-hour period.
18. Each building enclosing any PSH operation, that is subject to a VE limit.	Conduct VE check	The specifications in § 63.7112(k)	The performance test must be conducted while all affected PSH operations within the building are operating; the performance test for each affected building must be at least 75 minutes, with each side of the building and roof being observed for at least 15 minutes.

TABLE 5 TO SUBPART AAAAA OF PART 63.—CONTINUOUS COMPLIANCE WITH OPERATING LIMITS

[As required in § 63.7121, you must demonstrate continuous compliance with each operating limit that applies to you, according to the following table.]

For . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
1. Each lime kiln controlled by a wet scrubber	Maintain the 3-hour block average exhaust gas stream pressure drop across the wet scrubber greater than or equal to the pressure drop operating limit established during the PM performance test; and maintain the 3-hour block average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the performance test.	Collecting the wet scrubber operating data according to all applicable requirements in § 63.7113 and reducing the data according to § 63.7113(a); maintaining the 3-hour block average exhaust gas stream pressure drop across the wet scrubber greater than or equal to the pressure drop operating limit established during the PM performance test; and maintaining the 3-hour block average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the performance test (the continuous scrubbing liquid flow rate measuring device must be accurate within ±1% and the continuous pressure drop measurement device must be accurate within ±1%).
2. Each lime kiln or lime cooler equipped with a FF and using a BLDS, and each lime kiln equipped with an ESP or FF using a PM detector.	a. Maintain and operate the FF or ESP such that the bag leak or PM detector alarm, is not activated and alarm condition does not exist for more than 5 percent of the total operating time in each 6-month period.	(i) Operating the FF or ESP so that the alarm on the bag leak or PM detection system is not activated and an alarm condition does not exist for more than 5 percent of the total operating time in each 6-month reporting period; and continuously recording the output from the BLD or PM detection system; and (ii) Each time the alarm sounds and the owner or operator initiates corrective actions within 1 hour of the alarm, 1 hour of alarm time will be counted (if the owner or operator takes longer than 1 hour to initiate corrective actions, alarm time will be counted as the actual amount of time taken by the owner or operator to initiate corrective actions); if inspection of the FF or ESP system demonstrates that no corrective actions are necessary, no alarm time will be counted.

TABLE 5 TO SUBPART AAAAA OF PART 63.—CONTINUOUS COMPLIANCE WITH OPERATING LIMITS—Continued

[As required in § 63.7121, you must demonstrate continuous compliance with each operating limit that applies to you, according to the following table.]

For . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
3. Each stack emissions source from a PSH operation subject to an opacity limit, which is controlled by a wet scrubber.	Maintain the 3-hour block average exhaust gas stream pressure drop across the wet scrubber greater than or equal to the pressure drop operating limit established during the PM performance test; and maintain the 3-hour block average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the performance test.	Collecting the wet scrubber operating data according to all applicable requirements in § 63.7113 and reducing the data according to § 63.7113(a); maintaining the 3-hour block average exhaust gas stream pressure drop across the wet scrubber greater than or equal to the pressure drop operating limit established during the PM performance test; and maintaining the 3-hour block average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the performance test (the continuous scrubbing liquid flow rate measuring device must be accurate within ±1% and the continuous pressure drop measurement device must be accurate within ±1%).
4. For each lime kiln or lime cooler equipped with a FF or an ESP that uses a COMS as the monitoring device.	a. Maintain and operate the FF or ESP such that the average opacity for any 6-minute block period does not exceed 15 percent.	<ul style="list-style-type: none"> i. Installing, maintaining, calibrating and operating a COMS as required by 40 CFR part 63, subpart A, General Provisions and according to PS-1 of appendix B to part 60 of this chapter, except as specified in § 63.7113(g)(2); and ii. Collecting the COMS data at a frequency of at least once every 15 seconds, determining block averages for each 6-minute period and demonstrating for each 6-minute block period the average opacity does not exceed 15 percent.

TABLE 6 TO SUBPART AAAAA OF PART 63.—PERIODIC MONITORING FOR COMPLIANCE WITH OPACITY AND VISIBLE EMISSIONS LIMITS

[As required in § 63.7121 you must periodically demonstrate compliance with each opacity and VE limit that applies to you, according to the following table]

For . . .	For the following emission limitation . . .	You must demonstrate ongoing compliance . . .
1. Each PSH operation subject to an opacity limitation as required in Table 1 to this subpart, or any vents from buildings subject to an opacity limitation.	a. 7–10 percent opacity, depending on the PSH operation, as required in Table 1 to this subpart.	<ul style="list-style-type: none"> (i) Conducting a monthly 1-minute VE check of each emission unit in accordance with § 63.7121(e); the check must be conducted while the affected source is in operation; (ii) If no VE are observed in 6 consecutive monthly checks for any emission unit, you may decrease the frequency of VE checking from monthly to semi-annually for that emission unit; if VE are observed during any semiannual check, you must resume VE checking of that emission unit on a monthly basis and maintain that schedule until no VE are observed in 6 consecutive monthly checks; (iii) If no VE are observed during the semi-annual check for any emission unit, you may decrease the frequency of VE checking from semi-annually to annually for that emission unit; if VE are observed during any annual check, you must resume VE checking of that emission unit on a monthly basis and maintain that schedule until no VE are observed in 6 consecutive monthly checks; and

TABLE 6 TO SUBPART AAAAA OF PART 63.—PERIODIC MONITORING FOR COMPLIANCE WITH OPACITY AND VISIBLE EMISSIONS LIMITS—Continued

[As required in § 63.7121 you must periodically demonstrate compliance with each opacity and VE limit that applies to you, according to the following table]

For . . .	For the following emission limitation . . .	You must demonstrate ongoing compliance . . .
2. Any building subject to a VE limit, according to item 8 of Table 1 to this subpart.	a. No VE	<p>(iv) If VE are observed during any VE check, you must conduct a 6-minute test of opacity in accordance with Method 9 of appendix A to part 60 of this chapter; you must begin the Method 9 test within 1 hour of any observation of VE and the 6-minute opacity reading must not exceed the applicable opacity limit.</p> <p>(i) Conducting a monthly VE check of the building, in accordance with the specifications in § 63.7112(k); the check must be conducted while all the enclosed PSH operations are operating;</p> <p>(ii) The check for each affected building must be at least 5 minutes, with each side of the building and roof being observed for at least 1 minute;</p> <p>(iii) If no VE are observed in 6 consecutive monthly checks of the building, you may decrease the frequency of checking from monthly to semi-annually for that affected source; if VE are observed during any semi-annual check, you must resume checking on a monthly basis and maintain that schedule until no VE are observed in 6 consecutive monthly checks; and</p> <p>(iv) If no VE are observed during the semi-annual check, you may decrease the frequency of checking from semi-annually to annually for that affected source; and if VE are observed during any annual check, you must resume checking of that emission unit on a monthly basis and maintain that schedule until no VE are observed in 6 consecutive monthly checks (the source is in compliance if no VE are observed during any of these checks).</p>

TABLE 7 TO SUBPART AAAAA OF PART 63.—REQUIREMENTS FOR REPORTS

[As required in § 63.7131, you must submit each report in this table that applies to you.]

You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Compliance report	a. If there are no deviations from any emission limitations (emission limit, operating limit, opacity limit, and VE limit) that applies to you, a statement that there were no deviations from the emission limitations during the reporting period;	Semiannually according to the requirements in § 63.7131(b).
	b. If there were no periods during which the CMS, including any operating parameter monitoring system, was out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period;	Semiannually according to the requirements in § 63.7131(b).
	c. If you have a deviation from any emission limitation (emission limit, operating limit, opacity limit, and VE limit) during the reporting period, the report must contain the information in § 63.7131(d);	Semiannually according to the requirements in § 63.7131(b).
	d. If there were periods during which the CMS, including any operating parameter monitoring system, was out-of-control, as specified in § 63.8(c)(7), the report must contain the information in § 63.7131(e); and	Semiannually according to the requirements in § 63.7131(b).

TABLE 7 TO SUBPART AAAAA OF PART 63.—REQUIREMENTS FOR REPORTS—Continued

[As required in § 63.7131, you must submit each report in this table that applies to you.]

You must submit a . . .	The report must contain . . .	You must submit the report . . .
	e. If you had a startup, shutdown or malfunction during the reporting period and you took actions consistent with your SSMP, the compliance report must include the information in § 63.10(d)(5)(i). Actions taken for the event	Semiannually according to the requirements in § 63.7131(b).
2. An immediate startup, shutdown, and malfunction report if you had a startup, shutdown, or malfunction during the reporting period that is not consistent with your SSMP.	The information in § 63.10(d)(5)(ii)	By fax or telephone within 2 working days after starting actions inconsistent with the SSMP.
3. An immediate startup, shutdown, and malfunction report if you had a startup, shutdown, or malfunction during the reporting period that is not consistent with your SSMP.		By letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authority. See § 63.10(d)(5)(ii).

TABLE 8 TO SUBPART AAAAA OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART AAAAA

[As required in § 63.7140, you must comply with the applicable General Provisions requirements according to the following table.]

Citation	Summary of requirement	Am I subject to this requirement?	Explanations
§ 63.1(a)(1)–(4)	Applicability	Yes.	
§ 63.1(a)(5)		No.	
§ 63.1(a)(6)	Applicability	Yes.	
§ 63.1(a)(7)–(a)(9)		No.	
§ 63.1(a)(10)–(a)(14)	Applicability	Yes.	
§ 63.1(b)(1)	Initial Applicability Determination	Yes	§§ 63.7081 and 63.7142 specify additional applicability determination requirements.
§ 63.1(b)(2)		No.	
§ 63.1(b)(3)	Initial Applicability Determination	Yes.	
§ 63.1(c)(1)	Applicability After Standard Established.	Yes.	
§ 63.1(c)(2)	Permit Requirements	No	Area sources not subject to subpart AAAAA, except all sources must make initial applicability determination.
§ 63.1(c)(3)		No.	
§ 63.1(c)(4)–(5)	Extensions, Notifications	Yes.	
§ 63.1(d)		No.	
§ 63.1(e)	Applicability of Permit Program	Yes.	
§ 63.2	Definitions	Additional definitions in § 63.7143.
§ 63.3(a)–(c)	Units and Abbreviations	Yes.	
§ 63.4(a)(1)–(a)(2)	Prohibited Activities	Yes.	
§ 3.4(a)(3)–(a)(5)		No.	
§ 63.4(b)–(c)	Circumvention, Severability	Yes.	
§ 63.5(a)(1)–(2)	Construction/Reconstruction	Yes.	
§ 63.5(b)(1)	Compliance Dates	Yes.	
§ 63.5(b)(2)		No.	
§ 63.5(b)(3)–(4)	Construction Approval, Applicability	Yes.	
§ 63.5(b)(5)		No.	
§ 63.5(b)(6)	Applicability	Yes.	
§ 63.5(c)		No.	
§ 63.5(d)(1)–(4)	Approval of Construction/Reconstruction	Yes.	
§ 63.5(e)	Approval of Construction/Reconstruction	Yes.	
§ 63.5(f)(1)–(2)	Approval of Construction/Reconstruction	Yes.	
§ 63.6(a)	Compliance for Standards and Maintenance	Yes.	
§ 63.6(b)(1)–(5)	Compliance Dates	Yes.	
§ 63.6(b)(6)		No.	
§ 63.6(b)(7)	Compliance Dates	Yes.	
§ 63.6(c)(1)–(2)	Compliance Dates	Yes.	
§ 63.6(c)(3)–(c)(4)		No.	
§ 63.6(c)(5)	Compliance Dates	Yes.	
§ 63.6(d)		No.	
§ 63.6(e)(1)	Operation & Maintenance	Yes	See § 63.7100 for OM&M requirements.
§ 63.6(e)(2)		No.	

TABLE 8 TO SUBPART AAAAA OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART AAAAA—Continued
 [As required in § 63.7140, you must comply with the applicable General Provisions requirements according to the following table.]

Citation	Summary of requirement	Am I subject to this requirement?	Explanations
§ 63.6(e)(3)	Startup, Shutdown Malfunction Plan ..	Yes.	
§ 63.6(f)(1)–(3)	Compliance with Emission Standards ..	Yes.	
§ 63.6(g)(1)–(g)(3)	Alternative Standard ..	Yes.	
§ 63.6(h)(1)–(2)	Opacity/VE Standards ..	Yes.	
§ 63.6(h)(3)		No.	
§ 63.6(h)(4)–(h)(5)(i)	Opacity/VE Standards ..	Yes	This requirement only applies to opacity and VE performance checks required in Table 4 to subpart AAAAA.
§ 63.6(h)(5) (ii)–(iii)	Opacity/VE Standards ..	No	Test durations are specified in subpart AAAAA; subpart AAAAA takes precedence.
§ 63.6(h)(5)(iv)	Opacity/VE Standards ..	No.	
§ 63.6(h)(5)(v)	Opacity/VE Standards ..	Yes.	
§ 63.6(h)(6)	Opacity/VE Standards ..	Yes.	
§ 63.6(h)(7)	COM Use ..	Yes.	
§ 63.6(h)(8)	Compliance with Opacity and VE ..	Yes.	
§ 63.6(h)(9)	Adjustment of Opacity Limit ..	Yes.	
§ 63.6(i)(1)–(i)(14)	Extension of Compliance ..	Yes.	
§ 63.6(i)(15)		No.	
§ 63.6(i)(16)	Extension of Compliance ..	Yes.	
§ 63.6(j)	Exemption from Compliance ..	Yes.	
§ 63.7(a)(1)–(a)(3)	Performance Testing Requirements ...	Yes	§ 63.7110 specifies deadlines; § 63.7112 has additional specific requirements.
§ 63.7(b)	Notification ..	Yes.	
§ 63.7(c)	Quality Assurance/Test Plan ..	Yes.	
§ 63.7(d)	Testing Facilities ..	Yes.	
§ 63.7(e)(1)–(4)	Conduct of Tests ..	Yes.	
§ 63.7(f)	Alternative Test Method ..	Yes.	
§ 63.7(g)	Data Analysis ..	Yes.	
§ 63.7(h)	Waiver of Tests ..	Yes.	
§ 63.8(a)(1)	Monitoring Requirements ..	Yes	See § 63.7113.
§ 63.8(a)(2)	Monitoring ..	Yes.	
§ 63.8(a)(3)		No.	
§ 63.8(a)(4)	Monitoring ..	No	Flares not applicable.
§ 63.8(b)(1)–(3)	Conduct of Monitoring ..	Yes.	
§ 63.8(c)(1)–(3)	CMS Operation/Maintenance ..	Yes.	
§ 63.8(c)(4)	CMS Requirements ..	No	See § 63.7121.
§ 63.8(c)(4)(i)–(ii)	Cycle Time for COM and CEMS ..	Yes	No CEMS are required under subpart AAAAA; see § 63.7113 for CPMS requirements.
§ 63.8(c)(5)	Minimum COM procedures ..	Yes	COM not required.
§ 63.8(c)(6)	CMS Requirements ..	No	See § 63.7113.
§ 63.8(c)(7)–(8)	CMS Requirements ..	Yes.	
§ 63.8(d)	Quality Control ..	No	See § 63.7113.
§ 63.8(e)	Performance Evaluation for CMS ..	No.	
§ 63.8(f)(1)–(f)(5)	Alternative Monitoring Method ..	Yes.	
§ 63.8(f)(6)	Alternative to Relative Accuracy test ..	No.	
§ 63.8(g)(1)–(g)(5)	Data Reduction; Data That Cannot Be Used.	No	See data reduction requirements in §§ 63.7120 and 63.7121.
§ 63.9(a)	Notification Requirements ..	Yes	See § 63.7130.
§ 63.9(b)	Initial Notifications ..	Yes.	
§ 63.9(c)	Request for Compliance Extension ..	Yes.	
§ 63.9(d)	New Source Notification for Special Compliance Requirements.	Yes.	
§ 63.9(e)	Notification of Performance Test ..	Yes.	
§ 63.9(f)	Notification of VE/Opacity Test ..	Yes	This requirement only applies to opacity and VE performance tests required in Table 4 to subpart AAAAA. Notification not required for VE/opacity test under Table 6 to subpart AAAAA.
§ 63.9(g)	Additional CMS Notifications ..	No	Not required for operating parameter monitoring.
§ 63.9(h)(1)–(h)(3)	Notification of Compliance Status ..	Yes.	
§ 63.9(h)(4)		No.	
§ 63.9(h)(5)–(h)(6)	Notification of Compliance Status ..	Yes.	
§ 63.9(i)	Adjustment of Deadlines ..	Yes.	
§ 63.9(j)	Change in Previous Information ..	Yes.	

TABLE 8 TO SUBPART AAAAA OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART AAAAA—Continued
 [As required in § 63.7140, you must comply with the applicable General Provisions requirements according to the following table.]

Citation	Summary of requirement	Am I subject to this requirement?	Explanations
§ 63.10(a)	Recordkeeping/Reporting General Requirements.	Yes	See §§ 63.7131 through 63.7133.
§ 63.10(b)(1)–(b)(2)(xii)	Records	Yes.	
§ 63.10(b)(2)(xiii)	Records for Relative Accuracy Test	No.	
§ 63.10(b)(2)(xiv)	Records for Notification	Yes.	
§ 63.10(b)(3)	Applicability Determinations	Yes.	
§ 63.10(c)	Additional CMS Recordkeeping	No	See § 63.7132.
§ 63.10(d)(1)	General Reporting Requirements	Yes.	
§ 63.10(d)(2)	Performance Test Results	Yes.	
§ 63.10(d)(3)	Opacity or VE Observations	Yes	For the periodic monitoring requirements in Table 6 to subpart AAAAA, report according to § 63.10(d)(3) only if VE observed and subsequent visual opacity test is required.
§ 63.10(d)(4)	Progress Reports	Yes.	
§ 63.10(d)(5)	Startup, Shutdown, Malfunction Reports.	Yes.	
§ 63.10(e)	Additional CMS Reports	No	See specific requirements in subpart AAAAA, see § 63.7131.
§ 63.10(f)	Waiver for Recordkeeping/Reporting ..	Yes.	
§ 63.11(a)–(b)	Control Device Requirements	No	Flares not applicable.
§ 63.12(a)–(c)	State Authority and Delegations	Yes.	
§ 63.13(a)–(c)	State/Regional Addresses	Yes.	
§ 63.14(a)–(b)	Incorporation by Reference	No.	
§ 63.15(a)–(b)	Availability of Information	Yes.	

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