



# Federal Register

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**Friday,  
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**Part II**

## **Environmental Protection Agency**

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**40 CFR Part 63**

**National Emission Standards for  
Hazardous Air Pollutants for Lime  
Manufacturing Plants; Proposed Rule**

**ENVIRONMENTAL PROTECTION AGENCY****40 CFR Part 63**

[Docket ID No. OAR-2002-0052; FRL-7418-1]

RIN 2060-AG72

**National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Proposed rule.

**SUMMARY:** This action proposes national emission standards for hazardous air pollutants (NESHAP) for the lime manufacturing source category. The lime manufacturing emission units regulated would include lime kilns, lime coolers, and various types of materials processing operations (MPO). 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 proposed standards would 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 standards as proposed would reduce non-volatile metal HAP emissions from the lime manufacturing industry source category by approximately 21 megagrams per year (Mg/yr) (23 tons per year (tons/yr)) and would reduce emissions of particulate matter (PM) by 14,000 Mg/yr (16,000 tons/yr).

**DATES:** *Comments.* Submit comments on or before February 18, 2003.

*Public Hearing.* If anyone contacts the EPA requesting to speak at a public hearing by January 9, 2003, a public hearing will be held on January 21, 2003.

**ADDRESSES:** *Comments.* Comments may be submitted electronically, by mail, by facsimile, or through hand delivery/courier. Follow the detailed instructions as provided in the **SUPPLEMENTARY INFORMATION** section.

*Public Hearing.* If a public hearing is held, it will be held at the new EPA

facility complex in Research Triangle Park, NC.

**FOR FURTHER INFORMATION CONTACT:** *General and technical information.* Joseph P. Wood, P.E., Minerals and Inorganic Chemicals Group, Emissions Standards Division (C504-05), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5446, electronic mail (e-mail) address [wood.joe@epa.gov](mailto:wood.joe@epa.gov).

*Methods, sampling, and monitoring information.* Michael Toney, Source Measurement Technology Group, Emission Monitoring and Analysis Division (D205-02), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5247, e-mail address [toney.mike@epa.gov](mailto:toney.mike@epa.gov).

*Economic impacts analysis.* Eric Crump, Innovative Strategies and Economics Group, Air Quality Strategies and Standards Division (C339-01), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541-4719, e-mail address [crump.eric@epa.gov](mailto:crump.eric@epa.gov).

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

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

*Docket.* The EPA has established an official public docket for this action under Docket ID No. OAR-2002-0052. The official public docket is the collection of materials that is available for public viewing at the Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center, (EPA/DC) EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The 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.

*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 submit or review public comments, 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. 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.

For public commenters, it is important to note that EPA's policy is that public comments, whether submitted electronically or in paper, will be made available for public viewing in EPA's electronic public docket as EPA receives them and without change, unless the comment contains copyrighted material, CBI, or other information whose disclosure is

restricted by statute. When EPA identifies a comment containing copyrighted material, EPA will provide a reference to that material in the version of the comment that is placed in EPA's electronic public docket. The entire printed comment, including the copyrighted material, will be available in the public docket.

Public comments submitted on computer disks that are mailed or delivered to the docket will be transferred to EPA's electronic public docket. Public comments that are mailed or delivered to the docket will be scanned and placed in EPA's electronic public docket. Where practical, physical objects will be photographed, and the photograph will be placed in EPA's electronic public docket along with a brief description written by the docket staff.

**Comments.** You may submit comments electronically, by mail, by facsimile, or through hand delivery/courier. To ensure proper receipt by EPA, identify the appropriate docket identification number in the subject line on the first page of your comment. Please ensure that your comments are submitted within the specified comment period. Comments submitted after the close of the comment period will be marked "late." EPA is not required to consider these late comments.

**Comments Submitted Electronically.** If you submit an electronic comment as prescribed below, EPA recommends that you include your name, mailing address, and an e-mail address or other contact information in the body of your comment. Also include this contact information on the outside of any disk or CD ROM you submit and in any cover letter accompanying the disk or CD ROM. This ensures that you can be identified as the submitter of the comment and allows EPA to contact you in case EPA cannot read your comment due to technical difficulties or needs further information on the substance of your comment. EPA's policy is that EPA will not edit your comment, and any identifying or contact information provided in the body of a comment will be included as part of the comment that is placed in the official public docket and made available in EPA's electronic public docket. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

Your use of EPA's electronic public docket to submit comments to EPA electronically is EPA's preferred method for receiving comments. Go directly to EPA Dockets at <http://www.epa.gov/edocket> and follow the online

instructions for submitting comments. Once in the system, select "search" and then key in Docket ID No. OAR-2002-0052. The system is an "anonymous access" system, which means EPA will not know your identity, e-mail address, or other contact information unless you provide it in the body of your comment.

Comments may be sent by electronic mail (e-mail) to [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov), Attention Docket ID No. OAR-2002-0052. In contrast to EPA's electronic public docket, EPA's e-mail system is not an "anonymous access" system. If you send an e-mail comment directly to the Docket without going through EPA's electronic public docket, EPA's e-mail system automatically captures your e-mail address. E-mail addresses that are automatically captured by EPA's e-mail system are included as part of the comment that is placed in the official public docket and made available in EPA's electronic public docket.

You may submit comments on a disk or CD ROM that you mail to the mailing address identified in this document. These electronic submissions will be accepted in Wordperfect or ASCII file format. Avoid the use of special characters and any form of encryption.

**Comments Submitted By Mail.** Send your comments (in duplicate, if possible) to: Lime Manufacturing NESHAP Docket, EPA Docket Center (Air Docket), U.S. EPA West, Mail Code 6102T, Room B108, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, Attention Docket ID No. OAR-2002-0052.

**Comments Submitted By Hand Delivery or Courier.** Deliver your comments (in duplicate, if possible) to: EPA Docket Center, U.S. EPA West, Mail Code 6102T, Room B108, 1301 Constitution Avenue, NW., Washington, DC 20004, Attention Docket ID No. OAR-2002-0052. Such deliveries are only accepted during the Docket Center's normal hours of operation as identified in this document.

**Comments Submitted By Facsimile.** Fax your comments to: (202) 566-1741, Attention Lime Manufacturing NESHAP Docket, Docket ID No. OAR-2002-0052.

**CBI.** Do not submit information that you consider to be CBI through EPA's electronic public docket or by e-mail. Send or deliver information identified as CBI only to the following address: OAQPS Document Control Officer (C404-02), U.S. EPA, 109 TW Alexander Drive, Research Triangle Park, NC 27709, Attention Joseph Wood, Docket ID No. OAR-2002-0052. You may claim information that you submit to EPA as CBI by marking any part or all of that information as CBI (if you submit CBI on disk or CD ROM, mark the outside

of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

**Public Hearing.** Persons interested in presenting oral testimony or inquiring as to whether a hearing is to be held should contact Mr. Joseph Wood, Minerals and Inorganic Chemicals Group, Emission Standards Division (C504-05), Research Triangle Park, NC 27711, telephone number (919) 541-5446, at least 2 days in advance of the public hearing. Persons interested in attending the public hearing must also call Mr. Joseph Wood to verify the time, date, and location of the hearing. The public hearing will provide interested parties the opportunity to present data, views, or arguments concerning these proposed emission standards.

**Worldwide Web (WWW).** In addition to being available in the docket, an electronic copy of today's proposal 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 newly proposed 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.

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

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  - B. What Is the Source of Authority for Development of NESHAP?
  - C. What Criteria Are Used in the Development of NESHAP?
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- G. How Do I Continuously or Periodically Demonstrate Compliance with the Proposed Rule?
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- III. Rationale for Proposed Rule
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- V. Administrative Requirements
- A. Executive Order 12866, Regulatory Planning and Review
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- F. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996, 5 U.S.C. 601 *et seq.*
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- H. National Technology Transfer and Advancement Act of 1995
- I. Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

## I. Introduction

### A. *What Is the Purpose of the Proposed Rule?*

The purpose of the proposed rule 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 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. The

Lime Manufacturing category of major sources covered by today's proposed NESHAP was listed on July 16, 1992 (57 FR 31576). Major sources of HAP are those that have the potential to emit greater than 10 tons/yr of any one HAP or 25 tons/yr of any combination of HAP.

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

Section 112 of the CAA requires that we establish NESHAP for the control of HAP from both new and existing major sources. The CAA requires the NESHAP to reflect the maximum degree of reduction in emissions of HAP that is achievable. This level of control is commonly referred to as the maximum achievable control technology (MACT).

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).

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 Proposed Rule Developed?*

We used several resources to develop the proposed rule, including questionnaire responses from industry, emissions test data, site surveys of lime manufacturing facilities, operating and new source review permits, and permit applications. 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 proposed rule. 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 do not have the type of current detailed data on each of the facilities that would be covered by the proposed NESHAP, and the people living around the facilities, that would be necessary to conduct an analysis to determine the actual population exposures to the 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 proposed rule would reduce emissions and subsequent exposures. We also note one exception to this statement, namely that 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, with an ample margin of safety.

The HAP that would be controlled with the proposed rule 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 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 Proposed Rule**

### *A. What Lime Manufacturing Plants Are Subject to the Proposed Rule?*

The proposed rule would 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 would not be subject to the proposed rule. Other captive lime manufacturing plants, such as (but not limited to) those at steel mills and magnesia production facilities, would be subject to the proposed rule. 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. Lime product means the product of the lime kiln calcination process including calcitic lime, dolomitic lime, and dead-burned dolomite.

### *B. What Emission Units at a Lime Manufacturing Plant Are Included Under the Definition of Affected Source?*

The proposed rule would include the following emission units under the definition of affected source: Lime kilns and coolers, and MPO associated with limestone feed preparation (beginning with the raw material storage bin). The individual types of MPO that would be included under the definition of affected source are grinding mills, raw material storage bins, conveying system transfer points, bulk loading or unloading systems, screening operations, bucket elevators, and belt conveyors—if they follow the raw material storage bin in the sequence of MPO. The MPO associated with lime products (such as quicklime and hydrated lime), lime kiln dust handling, quarry or mining operations, and fuels would not be subject to today's proposed rule. The MPO are further distinguished in the proposed rule 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 would not be included under the definition of affected source under the proposed NESHAP.

### *C. What Pollutants Are Regulated by the Proposed Rule?*

The proposed rule would establish PM emission limits for lime kilns, coolers, and MPO with stacks.

Particulate matter would 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 proposed rule also would regulate opacity or visible emissions from most of the MPO, with opacity also serving as a surrogate for non-volatile and semi-volatile HAP metals.

#### *D. What Are the Emission Limits and Operating Limits?*

##### 1. Emission Limits

The PM emission limit for all of the kilns and coolers at an existing lime manufacturing plant would be 0.12 pounds (lb) PM per ton (0.06 kilogram (kg) per Mg) of stone feed. The PM emission limit for all of the kilns and lime coolers at a new lime manufacturing plant would be 0.10 lb/ton of stone feed. These emission limits would apply 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 emission rates from all of the kilns and coolers at the existing lime manufacturing plant, divided by the sum of the production rates of the kilns at the existing lime manufacturing plant, would be used to determine compliance with the emission limit for kilns and coolers at an existing lime manufacturing plant. Similarly, the sum of the PM emission rates from all of the kilns and coolers, divided by the sum of the production of the kilns at a new plant, would be used to determine compliance with the emission limit for kilns and coolers at a new lime manufacturing plant.

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

We are proposing that for each building enclosing any materials processing operation, each of the affected MPO in the building would have to comply individually with the applicable PM and opacity emission limitations discussed above. Otherwise, we propose that there must be no visible emissions from the building, except

from a vent, and the building's vent emissions must not exceed 0.05 grams PM per dry standard cubic meter and 7 percent opacity. We are proposing that for each fabric filter (FF) that controls emissions from only an individual, enclosed storage bin, the opacity emissions must not exceed 7 percent. For each set of multiple storage bins with combined stack emissions, emissions must not exceed 0.05 grams PM per dry standard cubic meter and 7 percent opacity.

##### 2. Operating Limits

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

For lime kilns that use a FF PM control device, you would be required to maintain and operate the FF such that the bag leak detection system (BLDS) alarm is not activated and 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 lime kilns that use an electrostatic precipitator (ESP) PM control device, you would be required to maintain the 3-hour rolling average current and voltage input to each electrical field of the ESP equal to or above the operating limits for these parameters that were established during the PM performance test. In lieu of complying with these ESP operating parameters, we are giving sources the option of monitoring PM levels with a PM detector in a manner similar to the procedures for monitoring PM from a FF using a BLDS. You would need 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 each 6-month period.

In lieu of using a bag leak detector, PM detector, or monitoring ESP operating parameters for lime kilns with a FF or ESP control device, we are providing the option of monitoring opacity (as an operating limit) with a continuous opacity monitoring system (COMS). Sources that choose to use a COMS would be 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.

For MPO subject to a PM emission limit and controlled by a wet scrubber, you would be 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 would be required to maintain the 3-hour rolling average gas stream pressure drop across the scrubber and the 3-hour rolling average scrubber liquid flow rate equal to or above the levels for the parameters that were established during the PM performance test.

You would be required to prepare a written operations, maintenance, and monitoring plan to cover all affected emission units. The plan would 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; and standard procedures for the use of a BLDS and PM detector, and any corrective actions to be taken when operating limits are deviated from, or when required in using a PM detector or BLDS.

#### *E. When Must I Comply With the Proposed Rule?*

The compliance date for existing lime manufacturing plants would be [Date 3 years from the date a final rule is published in the **Federal Register**]. (Three years may be needed to install new, or retrofit existing, air pollution control equipment.) The date the final rule is published in the **Federal Register** is called the effective date of the rule. We are proposing that emission units at a new lime manufacturing plant (*i.e.*, emission units for which construction or reconstruction commences after today's date) must be in compliance upon initial startup or the effective date of the rule, whichever is later.

#### *F. How Do I Demonstrate Initial Compliance With the Proposed Rule?*

##### 1. Kiln and Coolers

For the kiln and cooler PM emission limit, we are proposing that 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. The sum of the emissions from all the kilns at the existing lime manufacturing plant, divided by the sum of the average stone feed rates to each kiln at the existing lime manufacturing plant, must not exceed the emission limit of 0.12 lb PM/ton

stone feed; similarly, the sum of the emissions from all the kilns at a new lime manufacturing plant, divided by the sum of the average stone feed rates to each kiln at the new lime manufacturing plant, must not exceed the emission limit of 0.10 lb PM/ton stone feed. If you have a lime cooler(s) that has a separate exhaust to the atmosphere, you would be required to conduct a PM test on the cooler's exhaust concurrently with the kiln PM test. Then the sum of the emissions from all the kilns and coolers at the existing lime manufacturing plant, divided by the sum of the average stone feed rates to each kiln at the existing plant, must not exceed the emission limit of 0.12 lb PM/ton stone feed (or 0.10 lb/ton of stone feed for kilns/coolers at new lime manufacturing plants). For kilns with an ESP or wet scrubber, you would be required to collect and record the applicable operating parameters during the PM performance test and then establish the operating limits based on those data.

## 2. Materials Processing Operations

For the MPO with stacks and subject to PM emission limits, you would be 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 the MPO with stack opacity limits, you would be required to conduct a 3-hour Method 9 test on the exhaust, and each of the 30 consecutive, 6-minute opacity averages must not exceed 7 percent. The MPO that are controlled by wet scrubbers would not have an opacity limit, but you would be 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 MPO with fugitive emissions, you would be 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 MPO 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 from 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 Proposed Rule?*

#### 1. General

You would be 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 would be required to have valid data from at least three of four equally spaced data values for that hour from a CPMS that is not out of control according to your operation, maintenance, and monitoring plan. To calculate the 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). The 3-hour rolling average value for each operating parameter would be calculated as the average of each set of three successive 1-hour average values. The 3-hour rolling average would be updated each hour. Thus the 3-hour average rolls at 1-hour increments, i.e., once a 1-hour average has been determined based on at least four successive available 15-minute averages, a new 1-hour average would be determined based on the next four successive available 15-minute averages.

You would be 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).

#### 2. Kilns and Coolers

For kilns controlled by a wet scrubber, you would be required to maintain the 3-hour rolling 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 would be required to also maintain the 3-hour rolling average of the scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the most recent performance test.

For kilns controlled by an ESP, if you choose to monitor ESP operating parameters rather than use a PM detector or a COMS, you would be required to maintain the 3-hour rolling average current and voltage input to each electrical field of the ESP greater than or equal to the average current and voltage input to each field of the ESP established during the most recent performance test.

Sources opting to monitor PM emissions from an ESP with a PM

detector in lieu of monitoring ESP parameters or opacity would be 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 operations and maintenance 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 would provide an output of relative PM emissions. The PM detection system would have an alarm that would sound automatically when it detects an increase in relative PM emissions greater than a preset level. The PM detection systems would be required to be installed, operated, adjusted, and maintained so that they follow the manufacturer's written specifications and recommendations.

For kilns and lime coolers (if the cooler has a separate exhaust to the atmosphere) controlled by a FF and monitored with a BLDS, you would be required to maintain and operate the FF such that the BLDS 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 operations, maintenance, and monitoring 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 would be required to provide an output of relative PM emissions. The BLDS would be 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 would be required to be installed, operated, adjusted, and maintained so that they follow the manufacturer's written specifications and recommendations. Standard operating procedures for the BLDS and PM detection systems would need to be incorporated into the operations, maintenance, and monitoring 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/emc](http://www.epa.gov/ttn/emc).

For kilns and lime coolers monitored with a COMS, you would be required to maintain each 6-minute block average opacity level at or below 15 percent opacity. The COMS must be installed and operated in accordance with Performance Specification 1 (PS-1), 40 CFR part 60, Appendix B.

### 3. Materials Processing Operations

For stack emissions from MPO which are controlled by a wet scrubber, you would be required to maintain the 3-hour rolling 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 would be required to also maintain the 3-hour rolling average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the most recent performance test.

For MPO subject to opacity limitations and which do not use a wet scrubber control device, you would be required to periodically demonstrate compliance as follows. You would be required to conduct a monthly 1-minute visible emissions check of each emissions unit under the affected source definition. 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 would be required to 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 no visible emissions are observed during the semiannual test for any emissions unit, you may decrease the frequency of testing from semiannually to annually for that emissions unit. If visible emissions are observed during any annual test, you would be required to resume visible emissions 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 would be required to 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 would be required to begin within 1 hour of any observation of visible emissions, and the 6-minute opacity reading would be required to not exceed the applicable opacity limit. We request comment on using more frequent visible

emissions checks for MPO, such as going from monthly to quarterly, and then continuing with semiannual checks.

#### *H. How Do I Determine if My Lime Manufacturing Plant Is a Major Source and Thus Subject to the Proposed Rule?*

The proposed rule would 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 would need to determine whether its plant is a major or area source, since this determines whether the lime manufacturing plant would be an affected source under the proposed rule. 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 may be interpreted to imply that the CAA requires an estimate 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 would 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 would each be below the 10/25 tons/yr criteria. One potential approach to estimating HAP metals emissions from a lime manufacturing plant is to require measurement of the PM emissions from all of the emission units at the plant and then allow the use of a ratio (which we would specify in the final rule) of HAP metals to PM to calculate the metals emissions. We request comment on this approach to estimating HAP metals emissions. And although we are not proposing to require sources to test for all HAP to make a determination of whether the lime manufacturing plant is a major or area source, we do request comment on whether emissions testing of metal and/or organic HAP should be required for an owner or operator to claim that its lime manufacturing plant is an area source.

We are proposing, however, to require that a source measure HCl emissions from the kiln(s) in order for it to claim it is an area source (provided HCl is emitted at less than 10 tons/yr). Due to

the known problems with EPA Method 26 (which may have positive biases attributable to chloride salts rather than to HCl, and negative biases due to condensation and removal of HCl on the filter and/or in the sampling probe), we have decided that Methods 26 and 26A may not be used to measure HCl in the determination whether the source is an area source. We, in fact, adopted this same approach in the final NESHAP for the portland cement industry. See 40 CFR part 63, subpart LLL, and 64 FR 31907 and 31920 (June 14, 1998).

In addition, we worked with the American Society of Testing and Materials (ASTM), in conjunction with the National Lime Association (NLA), to develop an impinger-based method for the measurement of HCl based on Method 26 but which includes changes to the method to overcome the aforementioned biases. This ASTM HCl impinger-based method has been demonstrated on lime kilns and has been designated as ASTM Test Method D 6735-01. We approve of this method, and we propose to allow owners/operators to use it to measure HCl from lime kilns to determine whether their lime manufacturing plant is a major or area source. But because it is very important to obtain an accurate measurement of HCl emissions, we are proposing to require the paired-train option under section 11.2.6 of the method, and we are also proposing to require the post-test analyte spike option under section 11.2.7 of the method. Although we believe these additional quality assurance procedures are critical to obtain an accurate measurement of HCl, we seek comment on the appropriateness of requiring them.

We attempted to utilize proposed EPA Method 322 (based on gas filter correlation infrared spectroscopy) to gather HCl data from lime kilns and encountered technical problems. These problems included inadequate data availability, spike recovery, and response time, which led to our decision in the promulgation of the NESHAP for the portland cement industry to not finalize EPA Method 322. Today, we are affirming that decision and propose that Method 322 may not be used to measure HCl in the determination whether a lime manufacturing plant is an area source.

Based on the aforementioned difficulties with Method 26 and proposed Method 322, we propose that the test methods based on fourier transform infrared (FTIR) spectroscopy, EPA Methods 320 and 321, will be acceptable for measuring HCl from lime kilns if the owner/operator wishes to



claim its lime manufacturing facility is not a major source. These FTIR methods were finalized along with the portland cement industry NESHAP, and this requirement would be consistent with those NESHAP. (As mentioned above, we are also proposing to allow sources to use ASTM Test Method D 6735-01 for the measurement of HCl to determine whether their lime manufacturing plant is a major or area source.)

However, we acknowledge the NLA's concerns about the use of FTIR during the lime kiln test program. In letters the NLA sent to us, they suggested that in light of the alleged problems experienced by our test contractors in using FTIR, we should allow the use of Method 26 for measurement of HCl emissions from lime kilns. However, we do not completely agree with their assessment of the asserted difficulties we experienced with FTIR. Our response to NLA's concerns about FTIR may be found in the docket to the proposed rule. And despite any alleged problems with FTIR, we do not consider them to justify the use of Method 26 until the aforementioned problems with Method 26 can be resolved.

### III. Rationale for Proposed Rule

#### A. How Did We Determine the Source Category To Regulate?

Section 112(c) of the CAA directs the Agency to list each category of major sources that emits one or more of the HAP listed in section 112(b) of the CAA. We published an initial list of source categories on July 16, 1992 (57 FR 31576). "Lime Manufacturing" is one of the 174 categories of major sources on the initial list. As defined in our report, "Documentation for Developing the Initial Source Category List" (EPA-450/3-91-030, July 1992), the lime manufacturing source category includes any facility engaged in the production of high calcium lime, dolomitic lime, and dead-burned dolomite. These are the same applicable lime products as defined in the new source performance standard (NSPS) for lime manufacturing plants (40 CFR part 60, subpart HH) and in the proposed rule.

According to the background document for the initial source category listing, the listing of lime manufacturing as a major source category was based on the Administrator's determination that some lime manufacturing plants would be major sources of chlorine and metal HAP including, but not limited to, compounds of arsenic, cadmium, chromium, lead, manganese, mercury, nickel, and selenium. In addition, the results of emissions testing we

conducted in the development of the proposed rule indicate that many lime manufacturing plants may be major sources of HCl. Hydrogen chloride emissions from these lime kiln tests using EPA Method 320 ranged from 0.007 to 2.0 lbs HCl per ton of lime produced. Assuming an average HCl emission factor of 0.4 lb/ton, a lime manufacturing plant would only have to produce 50,000 tons of lime per year (which is a small lime manufacturing plant) for it to be a major source (for this reason alone).

The proposed rule would 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 (e.g., steel production facilities). One exception to this is that lime manufacturing operations located at pulp and paper mills would not be subject to the proposed rule. Lime manufacturing operations at pulp and paper mills would be subject to the NESHAP for combustion sources at kraft, soda, and sulfite pulp and paper mills. See 66 FR 3180, January 12, 2001.

Lime manufacturing operations at beet sugar processing plants would also not be subject to the NESHAP. Both the lime product and carbon dioxide in the beet sugar lime kiln exhaust are used in the beet sugar manufacturing process. Beet sugar lime kiln exhaust is typically routed through a series of gas washers to clean the exhaust gas prior to process use. The clean, cooled gas is then added to one or more carbonation units (which contain a mixture of beet juice, lime, and water) to provide the carbon dioxide necessary for carbonation and precipitation of lime, which purifies the beet sugar juice. Although the carbonation units are part of the sugar manufacturing process, they would provide additional cleaning of the lime kiln exhaust. Beet sugar plants typically operate only seasonally, and our analysis indicates that beet sugar plants are not major sources of HAP.

#### B. How Did We Determine the Affected Source?

The proposed rule would define the affected source as the lime manufacturing plant, and would include all of the limestone MPO at a lime manufacturing plant, beginning with the raw material storage bin, and all of the lime kilns and coolers at the lime manufacturing plant. This definition of affected source conforms with the General Provisions 40 CFR 63.2 definition, which essentially states that all emission units at a plant are to be considered as one affected source.

A new lime manufacturing plant is defined as the collection of any limestone MPO, beginning with the raw material storage bin, and any lime kiln or cooler for which construction or reconstruction begins after December 20, 2002. Thus, it is possible for an existing lime manufacturing plant and a new lime manufacturing plant to be located at the same site. This definition of new affected source includes the same emission units as the existing affected source, except that the new affected source only includes those emission units for which construction or reconstruction begins after December 20, 2002. The definitions are different because the MACT PM emission limit for kilns and coolers at a new lime manufacturing plant is more stringent than for those at an existing lime manufacturing plant.

In general, the emission units which are included in the definition of new or existing affected source were selected based on regulatory history (e.g., the applicability of NSPS and the information included in the initial source category listing) and to be consistent with other MACT standards (e.g., the MACT standards for the portland cement industry).

Although lime coolers were not among the list of emission units in the background document for the initial source category listing for lime manufacturing, lime coolers would be an emission unit under the definition of affected source in the proposed rule. All lime coolers are integrated with their associated kiln such that most coolers vent all of their exhaust (if there is an exhaust stream) to the kiln, although a few lime coolers (e.g., grate coolers) also vent a portion of their exhaust separately to the atmosphere.

The specific MPO which are included in the affected source definition include the following emission units: all of the grinding mills, raw material storage bins, conveying system transfer points, bulk loading or unloading systems, screening operations, bucket elevators, and belt conveyors, beginning with the raw material storage bin and up to the kiln. We define MPO to include these emission units under the proposed subpart because these units are also subject to the NSPS for Nonmetallic Minerals Processing Plants (referred to in this preamble as the NSPS subpart OOO). We specifically solicit comment on whether raw material storage piles should be included in the affected source definition.

In today's proposed rule, the first emission unit in the sequence of MPO which is included in the definition of affected source would be the raw

material storage bin. Furthermore, the first conveyor transfer point included under the affected source definition would be the transfer point associated with the conveyor transferring material from the raw material storage bin. This demarcation in the sequence of MPO which defines the first emission unit under the affected source definition is consistent with the applicability requirements under the NESHAP for the portland cement industry, 40 CFR part 63, subpart LLL.

The MPO emission units that would be excluded from the affected source definition are described as follows. Any MPO which precedes the raw material storage bin, such as those in quarry or mine operations, is not included in the definition of affected source. Any operations that process only lime product, lime kiln dust, or fuel would be excluded from the definition. Truck dumping into any screening operation, feed hopper, or crusher would not be included among the emission units considered under the affected source definition. (These exclusions are consistent with the NSPS subpart OOO). Finally, lime hydrators would not be included as an emission unit under the affected source definition since all hydrators are controlled by integrated wet scrubbers, which capture the lime PM (and associated trace metallic HAP) and recycle the scrubber water. Additionally, this is consistent with the NSPS subpart HH, which does not apply to lime hydrators.

### C. How Did We Determine Which Pollutants To Regulate?

The proposed rule would reduce emissions of non-volatile and semi-volatile metal HAP by limiting emissions of PM from the kiln and cooler, and certain MPO emission units. Particulate matter is a surrogate for the non-volatile and semi-volatile metal HAP that are always a subset of PM. Controlling PM emissions will control the non-volatile and semi-volatile metal HAP, since these compounds are associated with the PM, *i.e.*, they are by definition in the particulate phase (as opposed to the gaseous form). The available air pollution controls for the particulate HAP metals at lime manufacturing plants are the PM controls used at lime manufacturing plants, *i.e.*, FF, ESP, and wet scrubbers. These at-the-stack controls capture non-volatile and semi-volatile HAP metals non-preferentially along with other PM, thus showing why PM is a permissible indicator for these HAP metals. See *National Lime Ass'n v. EPA*, 233 F. 3d at 639. Also, using PM as a surrogate for the HAP metals would reduce the cost

of emissions testing and monitoring that would be required to demonstrate compliance with the otherwise numerous standards that would apply to individual HAP metals. In addition, several other NESHAP have been promulgated which use PM as a surrogate for non-volatile and semi-volatile HAP metals for the same reason—it is a technically sound surrogate since HAP metals are necessarily contained in PM, are controlled by PM control devices to roughly the same efficiency, and there are significant associated cost savings due to monitoring for one parameter instead of many.

The proposed rule would limit opacity or visible emissions from certain MPO emission units. Opacity serves as a surrogate for the non-volatile and semi-volatile HAP metals. Opacity is indicative of PM emission levels and, thus, for the same reasons that PM is a surrogate for the particulate HAP metals, opacity would also be a surrogate for the PM HAP metals. Further, opacity levels are reduced by reducing PM emissions, which would also reduce the metal HAP in the particulate phase, *i.e.*, the non-volatile and semi-volatile HAP.

We are proposing not to regulate HCl emissions from lime kilns. 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. The following explains the statutory basis for considering health thresholds when establishing standards, and the basis for today’s proposed decision, including a discussion of the risk assessment conducted to support the ample margin of safety decision.

Section 112 of the CAA includes exceptions to the general statutory requirement to establish emission standards based on MACT. Of relevance here, section 112(d)(4) allows us to develop risk-based standards for HAP “for which a health threshold has been established” provided that the standards achieve an “ample margin of safety.” Therefore, we believe we have the discretion under section 112(d)(4) to develop standards which may be less stringent than the corresponding floor-based MACT standards for some categories emitting threshold pollutants.

In deciding standards for this source category, we seek 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).

We emphasize that the use of section 112(d)(4) authority is wholly discretionary. As the legislative history indicates, cases may arise in which other considerations dictate that we should not invoke this authority to establish less stringent standards, despite the existence of a health effects threshold that is not jeopardized. For instance, we do not anticipate that we would set less stringent standards where evidence indicates a threat of significant or widespread environmental effects taking into consideration cost, energy safety and other relevant factors, although it may be shown that emissions from a particular source category do not approach or exceed a level requisite to protect public health with an ample margin of safety. We may also elect not to set less stringent standards where the estimated health threshold for a contaminant is subject to large uncertainty. Thus, in considering appropriate uses of our discretionary authority under section 112(d)(4), we consider other factors in addition to health thresholds, including uncertainty and potential “adverse environmental effects,” as that phrase is defined in section 112(a)(7) of the CAA.

We are proposing in today’s notice not to develop standards for HCl from lime kilns. This decision is based on the following. First, we consider HCl to be a threshold pollutant. Second, we have defined threshold values in the form of an Inhalation Reference Concentration (RfC) and acute exposure guideline level (AEGL). Third, HCl is emitted from lime kilns in quantities that result in human exposure in the ambient air at levels well below the threshold values with an ample margin of safety. Finally, there are no adverse environmental effects associated with HCl. The bases and supporting rationale for these conclusions are as follows.

For the purposes of section 112(d)(4), several factors are considered in our decision on whether a pollutant should be categorized as a health threshold pollutant. These factors include evidence and classification of

carcinogenic risk and evidence of noncarcinogenic effects. For a detailed discussion of factors that we consider in deciding whether a pollutant should be categorized as a health threshold pollutant, please see the April 15, 1998 **Federal Register** document (63 FR 18766).

In the April 15, 1998 action cited above, we determined that HCl, a Group D pollutant, is a health threshold pollutant for the purpose of section 112(d)(4) of the CAA (63 FR 18753).

The NLA conducted a risk assessment to determine whether the emissions of HCl from lime kilns at the current baseline levels resulted in exposures below the threshold values for HCl. We reviewed the risk assessment report prepared by the NLA and believe that it uses a reasonable and conservative methodology, is consistent with EPA methodology and practice, and reaches a reasonable conclusion that current levels of HCl emissions from lime kilns would be well under the threshold level of concern for human receptors. The summary of the NLA's assessment is organized as follows: (1) Hazard identification and dose-response assessment, (2) emissions and release information, and (3) exposure assessment.

It is important to note that the risk assessment methodology applied here by NLA should not be interpreted as a standardized approach that sets a precedent for how EPA will analyze application of section 112(d)(4) in other cases. The approach presented here, including assumptions and models, was selected to meet the unique needs of this particular case, to provide the appropriate level of detail and margin of safety given the data availability, chemicals, and emissions particular to this category.

The RfC is a "long-term" threshold, defined as an estimate of a daily inhalation exposure that, over a lifetime, would not likely result in the occurrence of significant noncancer health effects in humans. We have determined that the RfC for HCl of 20 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) is an appropriate threshold value for assessing risk to humans associated with exposure to HCl through inhalation (63 FR 18766, April 15, 1998). Therefore, the NLA used this RfC as the threshold value in their exposure assessment for HCl emitted from lime kilns.

In addition to the effects of long-term inhalation of HCl, the NLA, at our request, also considered thresholds for short-term exposure to HCl in this assessment. The AEGL toxicity values are estimates of adverse health effects

due to a single exposure lasting 8 hours or less. The confidence in the AEGL (a qualitative rating of either low, medium, or high) is based on the number of studies available and the quality of the data. Consensus toxicity values for effects of acute exposures have been developed by several different organizations, and we are beginning to develop such values. A national advisory committee organized by the EPA has developed AEGL for priority chemicals for 30-minute, 1-hour, 4-hour, and 8-hour airborne exposures. They have also determined the levels of these chemicals at each exposure duration that will protect against discomfort (AEGL1), serious effects (AEGL2), and life-threatening effects or death (AEGL3). The NLA used the AEGL1 value as the threshold value for assessing the inhalation health effects of short-term exposures to HCl.

The NLA conducted dispersion modeling for 71 lime plants and nearly 200 lime kilns, representing all operating captive and commercial lime plants in the U.S. that would potentially be subject to the proposed rule. The analyses performed assumed worst case operating scenarios, such as maximum production rate and 24 hours per day, 365 days per year operation. Hydrogen chloride emission rates were based on either measured data or default HCl stack concentrations. For plants having HCl measurement data, only HCl data collected using FTIR were used. For plants where no emissions data were available, the following HCl emission levels were assumed for the analyses: 10 parts per million by volume (ppmv) for kilns with either scrubbers or preheaters, 18 ppmv for kilns at Riverton Corporation, 26 ppmv for gas-fired kilns, and 85 ppmv for all other kilns. (The Riverton emission level was derived by multiplying its stack test results obtained using EPA Method 26 by a sampling method bias factor of 25. Method 26 may understate actual HCl emissions by a factor of between 2 and 25.) The HCl emission levels were converted to stack emission rates using the stack gas volumetric flow rate.

The release characteristics used for the dispersion model included stack height, stack diameter, exit temperature, and exit velocity. Using its own questionnaire, the NLA collected the necessary release information from all 71 plants. The exposure assessment was conducted for HCl emissions from all lime plants in the source category. As discussed above, the emissions data and release characteristics were used as inputs to the assessment. The approach taken by NLA was found to be consistent with the EPA's tiered

methodology. (See the U.S. EPA report "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources (revised)", report number EPA-454/R-92-019 (1992).) The approach for each of the facilities involved four steps: Step 1 was the modeling of HCl concentrations at the point of maximum concentration, whether occurring on-site or off-site, using SCREEN3, a screening-level air dispersion model. Step 2 was the same as Step 1, but modeling was performed at or beyond the fence line. Step 3 was the same as Step 1, but modeling was performed at the nearest off-site residence or business location. Step 4 was the modeling of HCl concentrations at the nearest residence or business location using the ISC-PRIME model. (ISC-PRIME is a steady-state Gaussian plume model based on the ISC3 dispersion model, with the Plume Rise Model Enhancements (PRIME) algorithm added for improved treatment of building downwash. The model can account for settling and dry deposition; building downwash; area, line, and volume sources; plume rise as a function of downwind distance; building dimensions and stack placement relative to a building; separation of point sources; and limited terrain adjustment.) Note that each succeeding step involves more refined site-specific data and less conservative assumptions.

The analyses performed under each of the above steps assumed worst case operating scenarios, such as maximum production rate, and in Steps 1 through 3 worst case meteorology. Local terrain and building downwash effects were also considered, and meteorological data were taken from the nearest National Weather Service meteorological station. Maximum one hour averages were converted to annual averages using a conversion factor of 0.08, consistent with EPA recommendations.

The NLA generated estimates of both chronic (annual average) and acute (one-hour) concentrations for comparison to the relevant health reference values or threshold levels. Acute and chronic exposures were compared to the AEGL1 of  $2,700 \mu\text{g}/\text{m}^3$  for one-hour exposures and the RfC of  $20 \mu\text{g}/\text{m}^3$  for long-term continuous exposure, respectively.

Noncancer risk assessments typically use a metric called the Hazard Quotient (HQ) to assess risks of exposures to noncarcinogens. The HQ is the ratio of exposure (or modeled concentration) to the health reference value or threshold level (*i.e.*, RfC or AEGL). HQ values less than "1" indicate that exposures are below the health reference value or threshold level and are likely to be

without appreciable risk of adverse effects in the exposed population. HQ values above "1" do not necessarily imply that adverse effects will occur, but that the potential for risk of such effects increases as HQ values exceed "1." In addition, when information on background levels of pollutants is not available, EPA has in some cases considered a HQ of 0.2 or below to be acceptable.

For the NLA assessment, if the HQ was found to be less than 0.5 for any of the first three steps using conservative defaults and modeling assumptions, the analysis concluded with that step. On the other hand, if the HQ exceeded 0.5, work proceeded to subsequent steps. There were no facilities where Step 4 (*i.e.*, the most refined step) yielded an HQ above 0.5. (Steps 1, 2, and 3 are considered "Tier 2" analyses under EPA's tiered modeling approach, whereas Step 4 is considered a "Tier 3" analysis.)

To help confirm that NLA's approach was reasonable, we decided to reproduce several of NLA's modeling analyses by performing our own analyses for selected facilities having the highest potential for health risk to the surrounding community. Generally, these were facilities having the highest emission rates or facilities where Tier 3 modeling was performed for actual off-site receptor locations. Fourteen kilns with emission rates greater than 5.0 grams/second were evaluated using the SCREEN3 air dispersion model. For the analyses, plant-specific parameters were used for source type, emission rate, stack height, stack inner diameter exit velocity, gas exit temperature, and location (urban versus rural). Assumptions about flat terrain, meteorology, and building dimensions were made, as appropriate. For plants with multiple stacks, emissions were considered to emanate from one co-located emission point. Then, in order to maintain a conservative approach, the lowest effective stack height parameters were utilized for all emissions. The model was run, and maximum concentrations for distances ranging from 100 to 5,000 meters were obtained.

To evaluate acute exposure, the HQ was determined by comparing the maximum concentrations to the HCl acute threshold level of 2,700  $\mu\text{g}/\text{m}^3$ . Maximum concentrations were then converted into annual concentrations, and the HQ was determined by comparing these concentrations to the HCl chronic health reference value of 20  $\mu\text{g}/\text{m}^3$ .

We then used the Human Exposure Model (HEM) to examine seven of the kilns that were modeled by the NLA

using ISC-PRIME. Concentrations were predicted at geographically-weighted centers of census blocks. Emissions were assumed to originate from a single stack using the lowest effective stack height reported at each facility. Six of the kilns modeled showed values well below the RfC, the highest having an HQ = 0.11. The seventh indicated an HQ of 0.96. The seventh kiln was re-simulated using site-specific emissions and stack data, resulting in an HQ = 0.21. Overall, we believe that the NLA has taken a reasonably conservative approach in estimating risk due to HCl exposure. This approach is consistent with the methodology and assumptions EPA would have used if the study had been done in-house, and in several instances NLA's approach is even more conservative. Furthermore, EPA conducted a parallel confirmatory analysis and found results consistent with those of the NLA assessment.

At this point, it should be noted that the potential for effects depends on an individual's total exposure to that chemical. As a result, exposure from all sources, not just the one in question, must be evaluated. Where possible, other exposures must be accounted for, either explicitly through monitoring or modeling, or by apportioning a portion of the health threshold level available to any individual source. To estimate the potential exposure from other sources, the NLA reviewed the ambient HCl concentration estimates derived by the air component of EPA's Cumulative Exposure Project (CEP). They found that the mean national HCl concentration corresponded to an HQ of 0.06 and the 95th percentile national HCl concentration corresponded to an HQ of 0.2, and they concluded that background HCl exposures were unlikely to exceed an HQ of 0.2. (These HQ helped confirm that the total HQ for a facility, including contributions from other sources ("background"), would not be expected to exceed "1." However, these background HQ were not actually added into a facility's final HQ estimate.)

Thus, we are comfortable with NLA's calculations and feel confident that exposures to HCl emissions from the facilities in question are unlikely to ever exceed an HQ of 0.2. Therefore, we believe that the predicted exposures from these facilities should provide an ample margin of safety to ensure that total exposures for nearby residents should not exceed the short-term or long-term health based threshold levels or health reference values, even when considering the possible contributions of other sources of HCl or similar respiratory irritants.

The standards for emissions must also protect against significant and widespread adverse environmental effects to wildlife, aquatic life, and other natural resources. The NLA did not conduct a formal ecological risk assessment. However, we have reviewed publications in the literature to determine if there would be reasonable expectation for serious or widespread adverse effects to natural resources.

We consider the following aspects of pollutant exposure and effects: Toxicity effects from acute and chronic exposures to expected concentrations around the source (as measured or modeled), persistence in the environment, local and long-range transport, and tendency for bio-magnification with toxic effects manifest at higher trophic levels.

No research has been identified for effects on terrestrial animal species beyond that cited in the development of the HCl RfC. Modeling calculations indicate that there is little likelihood of chronic or widespread exposure to HCl at concentrations above the threshold around lime manufacturing plants. Based on these considerations, we believe that the RfC can reasonably be expected to protect against widespread adverse effects in other animal species as well.

Plants also respond to airborne HCl levels. Chronic exposure to about 600  $\mu\text{g}/\text{m}^3$  can be expected to result in discernible effects, depending on the plant species. Plants respond differently to HCl as an anhydrous gas than to HCl aerosols. Relative humidity is important in plant response; there appears to be a threshold of relative humidity above which plants will incur twice as much damage at a given dose. Effects include leaf injury and decrease in chlorophyll levels in various species given acute, 20-minute exposures of 6,500 to 27,000  $\mu\text{g}/\text{m}^3$ . A field study reports different sensitivity to damage of foliage in 50 species growing in the vicinity of an anhydrous aluminum chloride manufacturer. American elm, bur oak, eastern white pine, basswood, red ash and several bean species were observed to be most sensitive. Concentrations of HCl in the air were not reported. Chloride ion in whole leaves was 0.2 to 0.5 percent of dry weight; sensitive species showed damage at the lower value, but tolerant species displayed no injury at the higher value. Injury declined with distance from the source with no effects observed beyond 300 meters. Maximum modeled long-term HCl concentrations (less than 10  $\mu\text{g}/\text{m}^3$ ) are well below the 600  $\mu\text{g}/\text{m}^3$  chronic threshold, and the maximum short-term HCl concentration (540  $\mu\text{g}/\text{m}^3$ ) is far

below the 6,500  $\mu\text{g}/\text{m}^3$  acute exposure threshold. Therefore, no adverse exposure effects are anticipated.

Prevailing meteorology strongly determines the fate of HCl in the atmosphere. However, HCl is not considered a strongly persistent pollutant, or one where long range transport is important in predicting its ecological effects. In the atmosphere, HCl can be expected to be absorbed into aqueous aerosols, due to its great affinity for water, and removed from the troposphere by rainfall. In addition, HCl will react with hydroxy ions to yield water plus chloride ions. However, the concentration of hydroxy ions in the troposphere is low, so HCl may have a relatively long residence time in areas of low humidity. No studies are reported of HCl levels in ponds or other small water bodies or soils near major sources of HCl emissions. Toxic effects of HCl to aquatic organisms would likely be due to the hydronium ion, or acidity. Aquatic organisms in their natural environments often exhibit a broad range of pH tolerance. Effects of HCl deposition to small water bodies and to soils will primarily depend on the extent of neutralizing by carbonates or other buffering compounds. Chloride ions are essentially ubiquitous in natural waters and soils so minor increases due to deposition of dissolved HCl will have much less effect than the deposited hydronium ions. Deleterious effects of HCl on ponds and soils, where such effects might be found near a major source emitting to the atmosphere, likely will be local rather than widespread, as observed in plant foliage.

Effects of HCl on tissues are generally restricted to those immediately affected and are essentially acidic effects. The rapid solubility of HCl in aqueous media releases hydronium ions, which can be corrosive to tissue when above a threshold concentration. The chloride ions may be concentrated in some plant tissues, but may be distributed throughout the organism, as most organisms have chloride ions in their fluids. Leaves or other tissues exposed to HCl may show some concentration above that of their immediate environment; that is, some degree of bioconcentration can occur. However, long-term storage in specific organs and biomagnification of concentrations of HCl in trophic levels of a food chain would not be expected. Thus, the chemical nature of HCl results in deleterious effects, that when present, are local rather than widespread.

In conclusion, acute and chronic exposures to expected HCl concentrations around the source are

not expected to result in adverse toxicity effects. Hydrogen chloride is not persistent in the environment. Effects of HCl on ponds and soils are likely to be local rather than widespread. Finally, HCl is not believed to result in biomagnification or bioaccumulation in the environment. Therefore, we do not anticipate any adverse ecological effects from HCl.

The results of the exposure assessment showed that exposure levels to baseline HCl emissions from lime production facilities are well below the health threshold value. Additionally, the threshold values, for which the RfC and AEGL values were determined to be appropriate values, were not exceeded when considering conservative estimates of exposure resulting from lime kiln emissions as well as considering background exposures to HCl and therefore, represent an ample margin of safety. Furthermore, no significant or widespread adverse environmental effects from HCl is anticipated. Therefore, under authority of section 112(d)(4), we have determined that further control of HCl emissions from lime manufacturing plants is not necessary.

We considered establishing a limit for mercury emissions from lime kilns, but there is no MACT floor for mercury—that is, we know of no way to establish an achievable floor standard for mercury beyond selecting an arbitrarily high emission limit that any source could achieve under any circumstance since no source controls mercury emissions using a means of control that can be duplicated by other sources. We also have initially determined that an emission limit for mercury based on a beyond-the-MACT-floor option is not considered cost effective at this time; nor is a beyond-the-floor standard justified for mercury after otherwise taking into account cost, non-air quality environmental and health impacts, and energy considerations.

#### *D. How Did We Determine the MACT Floor for Emission Units at Existing Lime Manufacturing Plants?*

##### 1. PM From the Kiln and Cooler

In establishing the MACT floor, section 112(d)(3)(A) of the CAA directs us to set standards for existing sources that are no less stringent than the average emission limitation achieved in practice by the best performing 12 percent of existing sources (for which there are emissions data) where there are more than 30 sources in the category or subcategory. Among the possible meanings for the word “average” as the term is used in the CAA, we considered

two of the most common. First, “average” could be interpreted as the arithmetic mean. The arithmetic mean of a set of measurements is the sum of the measurements divided by the number of measurements in the set. The word “average” could also be interpreted as the median of the emission limitation values. The median is the value in a set of measurements below and above which there are an equal number of values (when the measurements are arranged in order of magnitude). This approach identifies the emission limitation achieved by those sources within the top 12 percent, arranges those emissions limitations achieved in order of magnitude, and the control level achieved by, and achievable by, the median source is selected. Either of these two approaches could be used in developing MACT standards for different source categories.

We obtained PM data for 47 lime kilns over the course of developing the proposed rule. The most comprehensive body of data, and we believe the one that most accurately approximates the performance achieved by, and achievable by, the average of the best 12 percent of existing sources for which the Agency has emission data, are PM limitations contained in State and local agency permits for these sources. We used the permit limitations for the kilns (along with the supporting PM emissions data) in our MACT floor analysis because the permit limitations were indicative of the variability in the long-term performance of the emission controls. We examined multiple sets of PM emissions data obtained from the individual kilns during compliance testing to assure that the permit limitations do not underestimate the pollution control capabilities of these sources (*i.e.*, that actual performance is not superior to the permit limits, in which case the MACT floor would need to be based on that superior performance; see *Sierra Club v. EPA*, 167 F. 3d 658, 661–62 (D.C. Cir. 1999)).

Simply taking the average or mean of the lowest 12 percent of the emissions data (without considering permit limitations, *i.e.*, achievability of the technology over the long-term) would not account for the inherent variability of performance of well-designed and operated emission controls, since individual emissions tests are based on short durations of sampling, typically 3 hour tests (because of the absence of PM continuous emissions monitors) and, thus, we would be required to extrapolate these “snapshot” data to ascertain long-term achievable performance. Additionally, we obtained multiple compliance test data for the

top performing kilns (where available); some of the kilns' data vary over two orders of magnitude and vary up to their permit limit. Further, these multiple data sets indicate that some of these top performing kilns would not be able to meet an emission limit based on a strictly arithmetic average of the top performing kilns' emissions data (the result being a standard not achieved by the average of the best performing sources, and hence impermissible).

We arrayed the data by permit limitation, from lowest to highest, in units of lbs PM/ton of limestone feed, along with the associated PM emissions test data. The best performing 12 percent of the 47 kilns are the best performing six kilns, with the third and fourth best performing kilns being the median. The six best performing kilns' permit limits for PM are 0.10, 0.12, 0.12, 0.12, 0.21, and 0.21 lb/ton limestone feed and are equipped with either a FF or ESP. The emission test data associated with these kilns indicate that these kilns have indeed achieved the limits in their State permits. The test data for the kilns permitted at or below 0.12 lb PM/ton limestone vary from 0.0091 to 0.0925 lb PM/ton limestone. We do not believe that these kilns could consistently achieve standards which are lower than the permit limitation of 0.12 lb PM/ton limestone level, due to the probable long-term variability. Therefore, we are proposing a MACT floor PM emission limit of 0.12 lb PM/ton limestone for lime kilns at existing lime plants, using the median approach of the permit limits, which the associated emissions data show to be achievable and show as well to be a reasonable approximation of the achievable performance of the average of the best performing 12 percent of kilns for which we have emissions data, taking into consideration long-term variability in performance.

Most lime coolers (approximately 96 percent) in the lime manufacturing industry use ambient air for cooling and are integrated with the kiln such that all the cooler exhaust goes directly to the kiln for use as combustion air, or else the cooling of the lime takes place within the kiln itself (e.g., in vertical kilns). Thus, for 96 percent of the lime kilns, their emissions are actually the kiln and cooler emissions combined. The kiln PM emission limit of 0.12 lb/ton limestone is based on kiln permit limits and associated emissions data where the kiln and cooler emissions are combined. That is, based on our review of the questionnaire responses, discussions with plant personnel, and State permit information, none of the best performing kilns has a lime cooler

with a separate exhaust to the atmosphere. Thus, the kiln PM emission limit applies to the emissions from both the kiln and cooler. For the 96 percent of the kilns with no separate cooler exhaust, this would have no effect; that is, the coolers' emissions are already combined with the kiln prior to venting to the atmosphere. For the few kilns with grate coolers that separately vent a portion of the cooler exhaust to the atmosphere, the sum of the emissions from the kiln(s) and the grate cooler exhaust(s) at the existing lime manufacturing plant would be subject to the kiln and cooler emission limit of 0.12 lb PM/ton limestone feed. With this approach, the emissions from the kiln and cooler are subject to one emission limit, regardless of whether the kiln and cooler emissions are combined prior to release to the atmosphere. This reflects the performance achieved by, and achievable by (taking operating variability into account), the median of the 12 percent best performing kilns for which the Agency has emissions data. Further, since we have defined the affected source to include all kilns and coolers at a lime manufacturing plant, the kiln and cooler PM emission limit applies to the combined emissions of PM from all of the kilns and coolers at the existing lime manufacturing plant.

During the review of a draft of this proposal by the Small Business Advocacy Review (SBAR) Panel, an issue was raised about the potential for increases in sulfur dioxide (SO<sub>2</sub>) and HCl emissions that may occur if sources opt to remove existing PM wet scrubbers and replace them with dry PM control devices (such as FF or ESP) in order to meet the proposed kiln PM standard. About 20 percent of the lime produced in the U.S. is from kilns equipped with wet scrubbers, and about 90 percent of the wet scrubbers on lime kilns at major source lime plants would not meet the proposed PM limit. And although the proposed rule would not dictate how the lime kiln PM standard would have to be met, and our limited information indicates that one or two lime kilns with wet scrubbers may already meet the proposed PM standard (this may be because they burn natural gas as their primary fuel source), some sources may elect to upgrade their existing wet scrubber with a new venturi wet scrubber to meet the PM standard, while other existing sources that would not meet the proposed PM emission limit with a wet scrubber may opt to replace the wet scrubber with a FF. But because wet scrubbers are more effective than a FF or ESP at removing SO<sub>2</sub> (and HCl), the SBAR Panel was concerned that the

latter approach would result in increases in SO<sub>2</sub> emissions from these kilns. Therefore, we request comment on establishing a subcategory because of the potential increase in SO<sub>2</sub> and HCl emissions and other negative environmental impacts (discussed further below) that may result in complying with the proposed PM standard. We note, however, that the risk analysis showed that HCl levels emitted from lime kilns (including the increased HCl levels from kilns with wet scrubbers that are replaced with FF) are below the threshold value within an ample margin of safety.

Although subcategorization normally is based on differences in manufacturing process, emission characteristics, or technical feasibility, and is not justified by the sole fact that a different type of air pollution control equipment is utilized, EPA solicits comment on the possibility of establishing a subcategory for existing lime kilns using wet scrubbers in order to avoid potentially environmentally counterproductive effects due to increased emissions of acid gases and increased water and energy use. (Such a subcategory would also significantly reduce the cost impact on industry.) In addition, we request comment on what the MACT floor PM limit would be for this possible subcategory. If we based the MACT floor for this possible subcategory on an inspection of the permit limit information available to us, we would initially conclude that a PM emission limit of 0.6 lb PM/ton limestone feed may be appropriate. We note, however, that in order to use permit limits as a basis for a MACT floor determination, those permit limits must accurately reflect the actual performance of the sources used as the basis for the MACT floor determination (considering both emission levels and operating variability when designed and operated properly). We, therefore, solicit information both on PM permit limits for wet scrubber equipped kilns and on the actual emissions from those kilns. Lastly, at the recommendation of the SBAR Panel, we specifically request comment on any operational, process, product, or other technical and/or spatial constraints that would preclude installation of a FF or ESP at an existing lime manufacturing plant.

We note, however, that following the SBAR panel, the NLA brought to our attention the fact that if sources replace their wet scrubbers with FF to comply with the kiln PM standard, they would most likely also need to take steps to cool the exhaust gas stream entering the FF, since the operating temperature of a FF may be 400° less than a wet scrubber.

Cooling the gas stream as such may be done using various techniques, all with varying environmental and cost impacts. In light of this new information presented by NLA, we analyzed the costs of three PM control options available to sources with wet scrubbers that do not currently meet the proposed PM limit. Sources could elect to replace the existing wet scrubber with a new FF and cool the entering exhaust gas stream using either a water spray system or alternatively a kiln preheater. Or sources may elect to replace the existing wet scrubber with a new venturi wet scrubber and thereby avoid the need for gas stream cooling. Based on our review of the technical performance of venturi scrubbers, we believe that a new, high efficiency venturi wet scrubber with a gas stream pressure drop of 35 inches water gauge or more could meet the proposed lime kiln PM emission limit.

After reviewing the cost impacts of these control options, we chose the venturi wet scrubber as the basis for estimating the proposed rule's impacts (for kilns with wet scrubbers not meeting the proposed PM limit) because, in general, this option was the least expensive in terms of capital cost and, in some cases, annual cost as well. We request comment on our cost analyses of these control options (the details of which may be found in the docket) and on our determination to base the impacts estimates of the proposed rule on this venturi scrubber control option. We also acknowledge that the NLA's cost estimates lead them to conclude that it may be less expensive for sources to install a FF with gas stream cooling rather than install new venturi wet scrubbers.

In addition, there would be different emission and environmental impacts depending on the control option selected by sources with existing wet scrubbers not meeting the proposed PM limit. For the control option of a wet scrubber being replaced with a new FF, we estimate that national HCl emissions would increase by about 1,000 tons/yr, and national SO<sub>2</sub> emissions would increase by about 15,000 tons/yr. The NLA commented during the SBAR Panel that the resulting SO<sub>2</sub> increases under this option could cause a lime plant to become subject to new source review (NSR) rule requirements, and the source would, thus, incur additional costs associated with this review. Sources utilizing this control option may or may not be excluded from NSR if it is a pollution control project. Under the current NSR rules and guidance, a net emissions increase of 40 tons/yr SO<sub>2</sub> would trigger NSR even if this increase was due to a pollution control project,

unless the control project qualified for a Pollution Control Project Exclusion. The EPA is currently revising the NSR rules. Finally, no change in SO<sub>2</sub> or HCl emissions would be expected for sources that replace existing wet scrubbers with new venturi wet scrubbers. With no resultant SO<sub>2</sub> emissions increases, it would be unlikely that sources would seek an NSR exclusion.

We also acknowledge there would be additional negative environmental impacts if all kilns with wet scrubbers not meeting the proposed PM limit are replaced with new venturi wet scrubbers. These impacts would include an increase in national water consumption by about 4.2 billion gallons per year from current levels, and an increase in electricity consumption by about 7.2 million kilowatt-hours/yr. (Industry estimates that along with this additional electricity consumption, an additional 8,000 tons/yr of carbon dioxide would be emitted from fossil fuel fired electrical power generating stations.) These increases result from the new venturi wet scrubbers requiring a higher water flow rate and larger fans to handle the increased gas pressure drop. We note, however, that with a higher PM limit for a possible wet scrubber subcategory, national PM emissions from lime kilns would be approximately 1,000 tons/yr greater than if there were no subcategory.

## 2. Mercury From the Kiln

Mercury emitted from lime kilns originates from the raw materials and fuels fed to the kiln. In considering a potential floor for mercury from these emission units, we considered both at-the-stack controls and substitution of feed and fuels as a potential basis for a standard. Since no sources are controlling the mercury emissions from their lime kilns using at-the-stack controls, such control cannot be the basis for a floor standard.

Switching of raw material feed or fuel is also not a basis for establishing a floor standard because these means of control are not available, leading to unachievable standards. Nor is there any indication that feed or fuel substitution would control mercury emissions from these sources. The reasons for these conclusions are set out below.

Substitution of raw materials, *i.e.*, feedstock substitution, is not an available means of control. First, raw materials are proprietary. No kiln can use another's raw materials. Thus, a standard based on feed control is not achievable because it is not even available. No second kiln could

duplicate a "low mercury" source's performance, even assuming there was a low mercury source of feed material. In addition, we are aware of no data or information indicating that a certain type of limestone or source of limestone has a lower concentration of mercury, and although such deposits may exist, we do not believe such deposits of limestone exist sufficiently throughout the U.S. to supply the industry. Further, assuming there was a widespread source of limestone with a lower level of mercury (which is highly unlikely), it is unclear that this would lead to lower mercury emissions (or what the reductions of mercury emissions would be), since mercury emissions from lime kilns also originate from the fuel.

A floor standard based on substitution of so-called clean mercury fossil fuels is likewise not achievable due to unavailability of this means of control. The floor for existing sources would have to be based on either coal or natural gas substitution since there are enough sources using coal or natural gas to constitute a MACT floor for existing kilns. However, there are simply inadequate amounts of "low mercury" coal and natural gas available to power this industry. Thus, we see no feasible way for the lime industry to function if it can only use the 6 percent "cleanest" fuels to make its product. See H.R. Rep. No. 101-490, 101st Cong. 2d sess. 328 ("MACT is not intended \* \* \* to drive sources to the brink of shutdown").

Nor do we see any evidence that "low mercury" coal exists. Our analysis shows that the average mercury levels for the various coal types—bituminous, subbituminous, and lignite coals—are nearly the same at around 0.1 part per million by weight. These data show that there is not a certain type of coal that has a lower mercury level.

Also, based on the data in the EPA Utility Study and Report to Congress, emissions of other HAP metals would or could increase if coal or oil were to be substituted to try and achieve lower mercury emissions. These data indicate that levels of HAP metals in coal are so variable that decreases in emissions of one HAP metal are offset by increases in others when different coals are used as fuel. These data also show that if fuel oil is substituted for coal, nickel emissions will increase because fuel oil typically contains more nickel than coal. Thus, based on these data, we believe that fuel switching among coal and oil is not an effective means of controlling HAP metal emissions (including mercury), even if this were an available means of control.

For new as well as existing kilns, we considered basing the floor for mercury



on the use of natural gas, although the few mercury emissions data we have cannot allow us to definitively state what effect fuel type has on emissions. However, we do not regard natural gas fuel substitution as an available technology for new sources. Natural gas is not readily available throughout the U.S., *i.e.*, the infrastructure for its delivery (pipelines, pumping stations, etc.) is not available for all locations where lime manufacturing plants exist and is not expected to be economically available to build such infrastructure throughout the U.S. Although U.S. natural gas reserves may be considered plentiful, the gas still needs to be extracted through drilling and the construction of wells. Thus, for plants located far from a natural gas pipeline, natural gas is not a reasonable alternative. Additionally, although the infrastructure (pipelines, wells, storage facilities) can be built, the delivery capacity will likely not be available to accommodate a fuel switch to natural gas within the time frame by which new kilns would have to comply.

We note further that the amounts of mercury emitted by these kilns is small, roughly one pound per plant per year. Although the floor provisions of the CAA do not provide a *de minimis* exception to establishing floors, see *National Lime v. EPA*, 233 F. 3d at 640, the small amounts of mercury emitted reinforce the Agency's technical determinations that control via substitutions of feed or fuel are neither feasible nor likely to be effective since random variability in these feed and fuels will likely result in equal amounts of mercury being emitted in any case. Indeed, it is the Agency's view that not even a single source could reliably duplicate its own performance for mercury due to the small amounts emitted and the random variability of fuels and feed.

### 3. PM and Opacity From MPO

There are numerous types of MPO such as grinding mills, storage bins, conveying systems (such as bucket elevators and belt conveyors), transfer points, and screening operations at each lime manufacturing plant. We investigated whether there were any MPO subject to standards more stringent than the NSPS subpart OOO, or otherwise performing with consistently lower emissions than required by the NSPS (*i.e.*, performing at a lower level without being subject to a regulatory limit), that would serve as a basis for a MACT floor. To this end, we reviewed the applicable requirements for lime manufacturing plants located in nonattainment areas for PM<sub>10</sub>

(particulate matter with an aerodynamic diameter less than or equal to 10 microns), since presumably these areas of the U.S. would be the most likely to have more stringent PM emission limitations. We found seven lime manufacturing plants located in PM<sub>10</sub> nonattainment areas. The information available to us on these plants indicated that no MPO were subject to standards more stringent than the NSPS subpart OOO or otherwise performing better. We believe that the NSPS subpart OOO standards reasonably reflect the level of performance achieved by, and achievable by, the average of the best performing 12 percent of sources.

The basis for the MACT floor for these emission units is the NSPS subpart OOO as it has been applied to lime manufacturing plants, which serves as a reasonable measure of the performance of the average of the best performing sources. The NSPS subpart OOO sets PM, opacity, and visible emission limits for limestone MPO that were constructed, reconstructed, or modified after August 31, 1983. We investigated whether enough of these MPO are located at lime manufacturing plants subject to the NSPS subpart OOO to make a MACT floor determination. Using the median approach to determining MACT floors, at least 6 percent would need to be subject to the NSPS subpart OOO.

In one approach to estimating the number of MPO at lime manufacturing plants that are subject to the NSPS subpart OOO, we estimate that there are 104 lime manufacturing plants in the U.S., and that at least seven of these were built after August 31, 1983. All of the MPO associated with these new, greenfield lime manufacturing plants that were built after August 31, 1983, would be subject to the NSPS subpart OOO. Therefore, at least 6.7 percent (7/104) of the MPO are subject to the NSPS subpart OOO, enough for the NSPS subpart OOO to serve as a basis for the MACT floor.

In another approach to estimating the percentage of lime manufacturing plant MPO that are subject to the NSPS subpart OOO, our information shows that at least 31 lime kilns were constructed after August 31, 1983, out of a total of about 257 lime kilns in the U.S. Assuming that the MPO associated with these new lime kilns are also new, we estimate that 12.1 percent (31/257) of the MPO are subject to the NSPS subpart OOO.

Thus, with either approach to estimating the number of MPO at lime manufacturing plants that are subject to the NSPS subpart OOO, there are enough to support a MACT floor

determination. Therefore, the MACT floor for MPO is equivalent to the NSPS subpart OOO.

### *E. How Did We Determine the MACT Floor for Emission Units at New Lime Manufacturing Plants?*

The CAA requires the MACT floor for new sources to be based on the degree of emissions reductions achieved in practice by the best-controlled similar source.

For HAP metals emissions from MPO at new lime manufacturing plants, the floor is the NSPS subpart OOO (the same as for MPO at existing lime manufacturing plants). As discussed previously, we investigated whether there were any MPO subject to standards more stringent than the NSPS subpart OOO, or were emitting at lower rates without being subject to some type of regulatory standards, that would serve as a basis for MACT for new sources. The information available to us indicates that no MPO are subject to standards more stringent than the NSPS subpart OOO or otherwise performing better. Therefore, the floor is the NSPS subpart OOO.

For HAP metals emissions from kilns and coolers, the floor for those at new lime manufacturing plants is defined by the permit limits and emissions data for PM, where PM is a surrogate for non-mercury HAP metals. As previously described in this preamble, the MACT floor PM emission limit for lime kilns and coolers at existing lime manufacturing plants would be 0.12 lb PM/ton limestone. This determination was based on the median approach, *i.e.*, on the third best kiln permit limit of 0.12 lb PM/ton limestone. For kilns at new lime manufacturing plants, MACT is based on the best controlled similar source, which is the kiln permitted at the lowest emission limit (*i.e.*, 0.10 lb PM/ton limestone). Test data for this kiln indicated that the emission level was 0.0925 lb PM/ton, demonstrating that this permit limit is indeed achievable, and that the permit level reasonably approximates the level of performance that is consistently achievable by this kiln (so that a lower floor level would not be technically justified). Therefore, the emission limit for kilns and coolers at a new lime manufacturing plant is 0.10 lb/ton stone feed. As with the existing sources, this emission limit applies to the combined emissions from all of the kilns and coolers at a new lime manufacturing plant.

As previously described and for the same reasons that there is no MACT floor for mercury for kilns at existing lime manufacturing plants, and the



beyond-the-MACT-floor options considered for kilns at existing lime manufacturing plants are not justified, there is no MACT for mercury for kilns at new sources.

#### *F. What Control Options Beyond the MACT Floor Did We Consider?*

Raw material feed or fuel switching may be considered potential beyond-the-floor options for mercury, but as previously stated, no data or information is available indicating that a certain type of limestone or source of limestone has a lower concentration of mercury or is generally available throughout the country. In addition, even if deposits of limestone with low levels of mercury were to be found, it is unlikely that the limestone would be in close proximity to the majority of lime manufacturing plants in the U.S. and, thus, the cost of transporting the limestone to lime manufacturing plants would be prohibitively expensive. (There would also be increased energy use associated with this option in the form of increased fuel use to transport raw materials.) Most, if not all, lime manufacturing plants are sited and located adjacent to or in close proximity to their source of limestone (usually a quarry or mine) to avoid the high cost of transporting the material.

Regarding fuel switching as a possible mercury MACT floor or beyond-the-MACT-floor option for existing or new kilns, using a fuel with a lower level of mercury, such as natural gas (instead of coal), may result in lower lime kiln mercury emissions. However, there are no data available to quantify what the emissions reductions would be since our analysis indicates that most mercury emissions originate from the limestone feed material (compared with coal), and so the emissions reductions that would be achieved via switching from coal to natural gas are uncertain.

Further, as explained above, natural gas is not readily available throughout the U.S. (*i.e.*, the infrastructure for its delivery (pipelines, pumping stations, etc.)), is not available for all locations where lime manufacturing plants exist, and is not expected to be economically available to build such infrastructure throughout the U.S.

We considered another beyond-the-MACT-floor option based on activated carbon injection—a mercury control technology currently used on various types of waste combustors. However, based on the already relatively low levels of mercury emissions from lime kilns, we expect that relatively low emissions reductions would be achieved from this technology. (Use of activated carbon injection also generates a

mercury-bearing waste stream to be disposed of.) The few mercury emissions data available (four data points) range from 0.7 to 2.5 micrograms/dry standard cubic meter (referenced to 7 percent oxygen). These uncontrolled levels are 10 to 100 times lower than the mercury emission standards established for various types of waste combustors and translate to an average annual emission rate of approximately 1 lb/year per lime kiln. Thus, this beyond-the-floor-control option would not be cost-effective because of the low emissions reductions expected and the high cost of control. Further, use of activated carbon generates an additional waste to be disposed of, and there are increases in energy use associated with the technology. After considering cost, energy, and non-air human health and environmental impacts, our initial conclusion is that basing beyond-the-floor standards for mercury on use of activated carbon is not warranted.

For HAP metal (PM) emissions from the kiln and MPO, no technologies were identified that would perform better than the technologies representative of the MACT floors that were determined.

Raw material feed or fuel switching is not a beyond-the-MACT-floor option for PM control from lime kilns, for reasons similar as to why it is not an option for mercury control. Regarding feed material switching, no data or information is available indicating that using a certain type or source of limestone would have a lower HAP metals content or would lead to reduced PM emissions. We do not believe that such deposits of limestone exist or that use of a certain type of limestone would consistently result in lower PM or metals emissions. Further, assuming there was a widespread source of limestone with a lower HAP metals content (which is highly unlikely), it is unclear that this would lead to lower HAP metals emissions (or what the reductions of the HAP metals emissions would be) since HAP metals emissions from lime kilns would also originate from the fuel. In addition, even if deposits of limestone with low levels of HAP metals or a lower PM-producing limestone were to be found, the cost of transporting the limestone to lime manufacturing plants would be prohibitively expensive. In addition, as noted earlier, there would be increased energy usage associated with the transport of large amounts of raw materials.

Regarding fuel switching as a possible beyond-the-MACT-floor option for HAP metals, using a fuel with a lower level of metals, such as natural gas (compared

to coal), may result in lower lime kiln metals emissions. However, there are insufficient data available to quantify what the emissions reductions would be, since as we described above, lime kiln metals emissions also originate from the limestone feed material. Further, natural gas is not readily available throughout the U.S. (*i.e.*, the infrastructure for its delivery (pipelines, pumping stations, etc.)) and may not be available for all locations where lime manufacturing plants exist. Further, the cost of using natural gas may be prohibitively expensive as the cost of natural gas continues to rise as the growing demand for it rises as well. We do not regard this as an available means of control for this source category. See also the discussion above as to why the use of natural gas is not a viable control option for mercury; this rationale also applies to the use of natural gas as a beyond-the-floor option for PM and non-mercury HAP metals. Consequently, we are not proposing any beyond-the-floor standard for HAP metal control based on requiring the use of natural gas rather than other fossil fuels.

Therefore, the Agency is proposing that the floor standard for mercury reflect no existing reduction and after considering the factors set out in CAA section 112 (d)(2), that no beyond-the-floor alternatives are achievable.

#### *G. How Did We Select the Format of the Proposed Rule?*

The formats selected for the proposed emission limits vary according to the emission source, pollutant, and the MACT basis for the limits. The formats selected include a production-based emission limit, pollutant concentration limits, and opacity limits.

For the kiln PM standard, the “lb PM/ton limestone” format was selected to be consistent with the NSPS for lime manufacturing plants, 40 CFR 60, subpart HH. This format also encourages kiln energy efficiency. A more energy efficient kiln emits less exhaust gas per ton of limestone processed, which results in a higher gas concentration of PM compared to a less energy efficient kiln for the same amount of lime produced and PM emitted. A concentration format (e.g., grains PM/dry standard cubic foot) would penalize more energy efficient kilns.

For the PM and opacity standards for MPO, a concentration format for PM and the opacity limit requirements were selected to be consistent with the NSPS for nonmetallic minerals processing, 40 CFR part 60, subpart OOO.

*H. How Did We Select the Test Methods and Monitoring Requirements for Determining Compliance With the Proposed Rule?*

1. PM From the Kiln and Cooler

Today's proposed rule would require you to conduct a PM performance test and concurrently measure the stone feed rate to the kiln during the test. If you operate a lime cooler associated with the kiln being tested that has a separate exhaust to the atmosphere, you would be required to conduct a Method 5 (40 CFR part 60, appendix A-3) test on the cooler's exhaust concurrently with the kiln Method 5 test. Method 5 is the long-standing EPA method for measuring PM emissions from stationary sources.

For each kiln with an ESP, if you choose to monitor ESP operating parameters in lieu of using a PM detector or a COMS, you would be required to collect and record the input voltage and current to each electrical field of the ESP during the PM performance test, and then determine the 3-hour operating limit for each parameter for each electrical field based on these data. We expect that most lime manufacturing plants with ESP already monitor the electrical current and voltage, which provides an indication of the ESP performance and consequently PM emissions as well. For continuous compliance demonstrations, you would be required to maintain the 3-hour rolling average current and voltage input to each electrical field of the ESP greater than or equal to the average current and voltage input to each field of the ESP as established during the performance test. You would be required to collect and reduce the data as previously described. A 3-hour rolling average was selected to be consistent with the usual 3-hour time required for the PM test (three test runs of at least 1 hour).

You would also have the option of monitoring PM emissions from an ESP with a PM detector, in lieu of monitoring ESP parameters. Sources may determine that this would allow them greater operational flexibility. These devices would be similar to the BLDS for FF, which are discussed below, but they are based on light scattering technology (and not the triboelectric technology).

For each kiln with a wet scrubber, you would be 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, and then establish the 3-hour operating limit for each of these parameters based on the data. Pressure

drop and flow rate are the scrubber operating parameters most often monitored and provide an indication of the scrubber's performance and consequently PM emissions as well. For continuous compliance demonstrations, you would be required to maintain the 3-hour rolling average pressure drop and flow rate greater than or equal to the operating limit established for these parameters during the performance test. You would be required to collect and reduce the data as previously described.

For kilns and lime coolers (if the cooler has a separate exhaust to the atmosphere) controlled by a FF, if you choose not to use a COMS, you would be required to install a BLDS. These systems are usually based on either triboelectric, electrodynamic, or light scattering technology and provide an indication of relative changes in particle mass loading. Leaks in filter bags or similar failures can be detected early enough to warn if additional inspection and preventative maintenance are needed to avoid major FF failures and excessive emissions. When the system detects an increase in relative PM emissions greater than a preset level, an alarm sounds automatically. The FF would be required to then be inspected to determine if corrective action is necessary. We believe that the monitoring of PM via BLDS is more appropriate, *i.e.*, a better technique, than monitoring FF operating parameters such as pressure drop. Some other MACT standards require the use of these types of monitors.

It should be noted that BLDS would also be required on positive pressure FF, which typically have multiple stacks. We specifically seek comment on the feasibility, practicality, and cost of using BLDS for these types of FF; and on alternative monitoring options for positive pressure FF that will provide a continuous indication of a kiln or cooler's compliance status with regard to PM. We also seek comment on whether EPA Method 9, 40 CFR part 60, appendix A-4 (manual observation of opacity) should be allowed in lieu of BLDS for positive pressure FF.

We are soliciting comment on requiring the application of PM continuous emission monitoring systems (CEMS) as a method to assure continuous compliance with the proposed PM emission limits for lime kilns and coolers. Specifically, we are soliciting comment on the cost of PM CEMS, and the relation of a PM CEMS requirement to the PM emission limits that are proposed today. This includes the level and averaging time of a CEMS-based PM emission limit, the methodology for deriving the limit from

the available data for lime kilns, and any additional emissions reductions that could be expected as a result of using a PM CEMS.

We have continued to learn about the capabilities and performance of PM CEMS through performing and witnessing field evaluations and through discussions with our European counterparts. We believe there is sound evidence that PM CEMS should work on lime kilns. See the revisions we made to the performance specification for PM CEMS (Performance Specification 11 (PS-11), 40 CFR part 60, appendix B, and Procedure 2, 40 CFR part 60, appendix F) at 66 FR 64176, December 12, 2001.

During the review of a draft of the proposed rule by the SBAR Panel, small entity representatives and some Panel members requested that we consider allowing COMS in lieu of requiring BLDS and other monitoring requirements for PM. The proposed rule would allow the use of COMS as an alternative to BLDS, PM detectors, or the monitoring of ESP operating parameters. However, we request summary data on lime kiln opacity levels measured with a COMS, and we request information on the applicability, advantages, and disadvantages of using COMS and BLDS (such as each method's sensitivity or lack of sensitivity, availability and quality of promulgated or approved specifications and procedures to verify initial performance, potential interferences or other quality assurance problems, inapplicability to certain APCD designs or configurations, cost, and precision and accuracy relative to the operating system to be monitored and the standards to be proposed).

The proposed rule would allow sources with FF or ESP to comply with a 15 percent opacity operating limit, as an alternative to using a BLDS, a PM detector, or the use of ESP operating parameters. We request comment on using a COMS to monitor opacity as an emission limit (which would act as a surrogate for HAP metals emissions), rather than as an operating limit, and what an appropriate MACT floor opacity limit would be. The range of opacity levels under consideration as the MACT floor opacity limit for lime kilns would be between 10 and 15 percent. Sensitivity for COMS is dependent on the path length that the light beam measures; the longer the path length, the more sensitive the measurement. Performance Specification 1 (PS-1), 40 CFR part 60, Appendix B, gives the performance criteria for COMS used to measure opacity for opacity limitation standards

but we recognize that there are potential measurement errors associated with monitoring opacity in stacks, especially for emission units subject to opacity limits less than 10 percent. The uncertainties in measurement accuracy result from the following: (1) The unavailability of calibration attenuators for opacity levels below 6 percent; (2) the error associated with the calibration error allowances, the zero and upscale drift specifications, the mandatory drift adjustment levels, and the imprecision associated with the allowed compensation for dirt accumulation; and (3) the minimum full scale range of 80 percent required of COMS in PS-1. Because of these aforementioned limitations, COMS are generally considered good "catastrophic" control equipment indicators using opacity generally above levels greater than 10 percent opacity.

A 15 percent opacity level is the opacity limit under the NSPS for lime kilns (40 CFR part 60, subpart HH) and based on a preliminary analysis, may also be the median opacity permit limit for the six top performing lime kilns. In addition, the NLA provided information indicating that the opacity level of one of the top performing lime kilns (in terms of PM emissions and permit limit) often varies between 10 and 15 percent. Finally, we acknowledge that other MACT standards, such as the Petroleum Refinery MACT (67 FR 17761) and the Secondary Aluminum MACT (65 FR 15690), have allowed the use of COMS. In the Petroleum Refinery MACT, the rule allows sources the option to comply with the NSPS (40 CFR part 60, subpart J) emission limitations (which includes various opacity limits for certain emission units) in order to comply with the MACT standard.

Another approach to using a COMS that was raised by some SBAR Panel members was to use it in a way similar to how a BLDS would be used to indicate the need for inspection and maintenance of the PM control device. Under this approach, we would specify a time period over which a significant increase in opacity level would trigger inspection of the PM control device for leaks or other malfunctions and maintenance (if needed). We recognize that the COMS currently being used in the lime manufacturing industry have a potential for error at opacities below 10 percent, and that the relevant range of opacities for the aforementioned application would be below 10 percent. If COMS were allowed under the final rule, we would prefer to set an opacity limit because of the COMS' ability to directly measure opacity, instead of using the COMS in the aforementioned

way (*i.e.*, similar to how a BLDS would be used). However, we solicit comment on this option, specifically including comments regarding the opacity levels expected from a kiln in compliance with the proposed PM limit and the sensitivity of COMS at those levels.

In accordance with the SBAR Panel's recommendations, we request comment on whether the proposed rule should specify separate, longer averaging time periods (or greater frequencies of occurrence) for demonstrating compliance with operating parameter limits, or other alternative approaches for demonstrating compliance with operating parameter limits. For example, the Panel recommended that we request comment on an approach for demonstrating compliance involving two tiers of standards for monitoring operating parameters whereby, if the conditions of the first monitoring tier are exceeded, the facility operator would be required to implement corrective actions specified in an established plan to bring the operating parameter levels back to established levels and, if the conditions of the second tier are exceeded, the exceedance would constitute a violation of the standard in question.

The SBAR Panel recommended that we take comment about the suitability of other PM control device operating parameters that could be monitored to demonstrate compliance with the PM emission limits in lieu of or in addition to the parameters proposed in today's rule. For example, small entity representatives suggested that for scrubber-equipped kilns, we should consider allowing the monitoring of parameters such as wet scrubber water pump amperage and wet scrubber exhaust gas outlet temperature in lieu of scrubber liquid flow rate. In addition, sources may request approval of alternative monitoring methods according to section 40 CFR 63.8(f).

## 2. PM From MPO

Since the MACT basis for these emission units is the NSPS subpart OOO, the performance test requirements for PM, opacity, and visible emissions are based in part on those in the NSPS subpart OOO, with additional requirements as well. Further, as is required under the NSPS subpart OOO, the proposed rule would require the performance test measurement of opacity from certain MPO, including fugitive emission units, using EPA Method 9, 40 CFR part 60, appendix A. We request comment on the suitability of using Method 9 for fugitive emission units, and whether other visual opacity measurement methods or techniques

may be more suitable, such as provisions from proposed EPA Methods 203A, 203B, and/or 203C, 58 FR 61640, January 6, 1994.

For MPO subject to a PM emission limit and controlled by a wet scrubber, you would be 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 and then establish the 3-hour operating limit for each of these parameters based on the data. Pressure drop and flow rate provide an indication of the scrubber's performance and consequently PM emissions as well.

For MPO subject to opacity limitations which do not use a wet scrubber control device, you would be required to conduct a 1-minute visible emissions check of each emission unit similar to the requirements under Method 22, 40 CFR part 60, appendix A7. The frequency of these checks is monthly but diminishes for the emission unit if no visible emissions are observed. If visible emissions are observed during any visible emissions check, you would be required to 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 would be required to begin within 1 hour of any observation of visible emissions and the 6-minute opacity reading would be required to not exceed the applicable opacity limit. Due to the many MPO at each lime manufacturing plant, this type of periodic monitoring for opacity was selected. This periodic approach to monitoring rewards sources that have no visible emissions by allowing the frequency of testing to be reduced. Finally, this monitoring approach (visual observations of opacity instead of continuous opacity monitoring systems) is similar to the monitoring regime used in the NSPS subpart OOO, which is the basis for MACT. Although we are not compelled to use identical monitoring regimes, we believe it is appropriate to do so here because it will "reasonably ensure compliance with the standard." See *National Lime*, 233 F. 3d at 635.

## 3. Other General Requirements

The operations, maintenance, and monitoring plan would be required to ensure effective performance of the air pollution control devices, monitoring equipment (including bag leak and PM detection equipment), and to minimize malfunctions.

**IV. Summary of Environmental, Energy and Economic Impacts**

*A. How Many Facilities Are Subject to the Proposed Rule?*

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 would not be subject to the proposed rule. We estimate that 70 percent of the remaining 80 lime manufacturing plants would be major sources, co-located with major sources, or part of major sources, and, thus, 56 lime manufacturing plants would be subject to this proposed rule.

*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 9,700 Mg/yr (10,700 tons/yr) 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 proposed standards would reduce HAP metals emissions from the lime manufacturing source category by about 21 Mg/yr (23 tons/yr), and would reduce HCl emissions by about 213 Mg/yr (235 tons/yr). In addition, we estimate that the

proposed standards would reduce PM emissions by about 14,000 Mg/yr (16,000 tons/yr) from a baseline level of 29,000 Mg/yr (32,000 tons/yr), and the proposed standards would reduce SO<sub>2</sub> emissions by about 3,400 Mg/yr (3,700 tons/yr) from a baseline of 128,000 Mg/yr (141,000 tons/yr). The roughly 2 percent decrease in HCl and SO<sub>2</sub> emissions is the projected result of uncontrolled sources installing baghouses to comply with the proposed PM standards.

Tables 1 and 2 summarize the baseline emissions and emissions reductions (or increases, in parentheses) estimates, in English and Metric units, respectively.

**TABLE 1.—TOTAL NATIONAL BASELINE EMISSIONS AND EMISSIONS REDUCTIONS FOR BOTH NEW AND EXISTING LIME MANUFACTURING PLANTS**  
[English Units]

Emissions	PM (tons/yr)	HAP metals (tons/yr)	HCl (tons/yr)	SO <sub>2</sub> (tons/yr)
Baseline emissions—existing sources .....	24,352	31.5	8,541	112,198
Baseline emissions—new sources .....	7,508	10.1	2,161	28,779
Total baseline emissions .....	31,861	41.6	10,702	140,977
Emissions reductions—existing sources .....	12,407	17.7	235	3,700
Emissions reductions—new sources .....	3,154	5.4	0	0
Total emissions reductions .....	15,561	23	235	3,700

**TABLE 2.—TOTAL NATIONAL BASELINE EMISSIONS AND EMISSIONS REDUCTIONS FOR BOTH NEW AND EXISTING LIME MANUFACTURING PLANTS**  
[Metric Units]

Emissions	PM (Mg/yr)	HAP metals (Mg/yr)	HCl (Mg/yr)	SO <sub>2</sub> (Mg/yr)
Baseline emissions—existing sources .....	22,093	28.6	7,748	101,787
Baseline emissions—new sources .....	6,811	9.2	1,961	26,108
Total baseline emissions .....	28,904	38	9,709	127,895
Emissions reductions—existing sources .....	11,256	16	213	3,356
Emissions reductions—new sources .....	2,861	4.9	0	0
Total emissions reductions .....	14,117	21	213	3,356

*C. What Are the Water Impacts?*

We expect overall water consumption for existing sources to increase by about 4,200 million gallons per year from current levels as a result of the proposed 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 water flow rate) to comply with the PM standards. 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 proposed rule, solid waste would be generated as additional PM is collected in complying with the PM standards. We estimate that about

16,000 tons/yr of additional solid waste would be generated as a result of today's proposed rule. This estimate does not include consideration that some of this would 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 7.2 million kilowatt-hours/yr (kWh/yr) as a result of the proposed 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 proposed 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 proposed rule is \$24.2 million (for large businesses) plus \$11.9 million for small businesses for a total of \$36.1 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 cost of the rule is estimated assuming bag leak and PM detectors would be installed on all lime kilns located at major sources, although other monitoring options are available, such as COMS), 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 standards.

The estimated annualized costs of the proposed standards are \$22.4 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?

The results of our economic impact analysis indicate the average price per ton for lime would increase by 2.1 percent (or \$1.17 per metric ton) as a result of the proposed standard for lime manufacturers. Overall lime production is projected to decrease by 1.8 percent as a result of the proposed standard. 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 proposed 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) would lose \$19.7 million annually, while domestic producer surplus would decline by \$0.8 million. Foreign producers would gain as a result of the proposed regulation with profit increasing by \$0.2 million. For more information regarding the economic impacts, consult the economic impact analysis in the docket for this rule.

### V. Administrative Requirements

#### A. Executive Order 12866, Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), we would be 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 has notified EPA that it considers this a "significant regulatory action" within the meaning of the Executive Order. The EPA has submitted the action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the docket (see **ADDRESSEES** section of this preamble).

#### B. Executive Order 13132, Federalism

Executive Order 13132, entitled "Federalism" (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 rule 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 proposed 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 proposed rule would not impose directly enforceable requirements on States, nor would 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 proposed rule. Although it does not apply to the proposed rule, we have coordinated with State and local officials in the development of the proposed rule and we are providing them an opportunity for comment. A summary of the concerns raised during the notice and comment process and our response to those concerns will be provided in the final rulemaking notice. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on the proposed rule from State and local officials.

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

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (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." This proposed 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 proposed rule. The EPA specifically solicits additional

comment on the proposed rule from tribal officials.

*D. 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 proposed rule is not subject to Executive Order 13045 because it is based on technology performance and not on health or safety risks. Additionally, the proposed rule is not economically significant as defined by Executive Order 12866.

*E. Unfunded Mandates Reform Act of 1995*

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 would 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 proposed 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 proposed rule contains no mandates affecting State, local, or tribal governments. Thus, today's proposed rule is not subject to the requirements of sections 202 and 205 of the UMRA.

We have determined that the proposed 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.

*F. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996, 5 U.S.C. 601 et seq.*

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions. For purposes of assessing the impacts of today's proposed 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 a 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 proposed 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 proposed rule would have no significant impact on a substantial number of small entities, EPA prepared a Small Business Flexibility Analysis that has all the components of an initial regulatory flexibility analysis (IRFA). An IRFA examines the impact of the proposed rule on small entities along with regulatory alternatives that could reduce that impact. The Small Business Flexibility Analysis (which is included in the economic impact analysis) is available for review in the docket, and is summarized below.

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 would not be subject to this proposed rule), three of which are small firms. Further, an additional 3 of the 19 small companies would not be subject to the proposed rule 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 would be subject to this proposed rule. 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 \$22.4 million.

The economic impact analysis we prepared for this proposed rule includes an estimate of the changes in product price and production quantities for the firms that this proposed rule 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 proposed 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

would 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 proposal. Economic analysis of provisions under earlier consideration for inclusion in this proposed rule indicated greater impacts on small businesses than those proposed today. 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 proposal). 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 proposal). 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 proposal).

Before concluding that the Agency could properly certify today's 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 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 proposed 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 proposal does not include an 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 are excluded from the definition of affected source.

- 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 defines 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.

- Recommend that we request comment on establishing a subcategory because of the potential increase in SO<sub>2</sub> and HCl emissions that may result in complying with the PM standard.

*Response:* We are requesting comment on this issue.

- 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 are requesting comment on these issues and have presented said analysis.

- 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:* Today's proposal includes this provision.

- 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:* Today's preamble includes this language.

- 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 solicits 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:* Today's preamble solicits 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:* Today's proposed rule does not include this requirement.

- 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.

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, and these pre-Panel efforts have been discussed previously in this preamble. These are summarized below.

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



2. Lime manufacturing plants that produce hydrated lime only would not be affected sources as well.

3. We are proposing 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.

4. We are proposing that compliance demonstrations for MPO be conducted monthly rather than on a daily basis. We believe this will reduce the amount of records needed to demonstrate compliance with the rule when implemented.

5. Furthermore, we are proposing the minimum performance testing frequency (every 5 years), monitoring, recordkeeping, and reporting requirements specified in the general provisions (40 CFR part 63, subpart A).

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

We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

#### G. Paperwork Reduction Act

The information collection requirements in the proposed 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 email at [auby.susan@epa.gov](mailto: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 proposed rule would require development and implementation of an operations, maintenance, and monitoring plan, which would include inspections of the control devices but would 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 7,766 labor hours per year, at a total annual cost of \$621,673. 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 \$377,933.

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: (1) Review instructions; (2) 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; (3) adjust the existing ways to comply with any previously applicable instructions and requirements; (4) train personnel to be able to respond to a collection of information; (5) search data sources; (6) complete and review the collection of information; and (7) 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.

Under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.*, the EPA must

consider the paperwork burden imposed by any information collection request in a proposed or final rule.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. By U.S. Postal Service, send comments on the ICR to the Director, Collection Strategies Division, U.S. EPA (2822T), 1200 Pennsylvania Avenue, NW., Washington DC 20460; or by courier, send comments on the ICR to the Director, Collection Strategies Division, U.S. EPA (2822T), 1301 Constitution Avenue, NW., Room 6143, Washington DC 20460 ((202) 566-1700); and to the Office of Information and Regulatory Affairs, OMB, 725 17th Street, NW., Washington, DC 20503, marked "Attention: Desk Officer for EPA." Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 20, 2002, a comment to OMB is best assured of having its full effect if OMB receives it by January 21, 2003. The final rule will respond to any OMB or public comments on the information collection requirements contained in the proposal.

#### H. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Public Law 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 proposed rule involves technical standards. The EPA cites the following standards in the proposed 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 (A-95-41) for the proposed rule.

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

The voluntary consensus standard ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," is cited in the proposed 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 proposed rule in addition to EPA Method 18 codified at 40 CFR part 60, appendix A, for the measurement of organic HAP from lime kilns. The standard ASTM D6420-99 will be incorporated by reference in § 63.14.

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 (ppbv) and 100 ppmv.

For target compound(s) not listed in Section 1.1 of ASTM D6420-99, but potentially detected by mass spectrometry, the proposed 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 proposed 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 proposed rule provided that the additional requirements described in Section 63.7142 of the proposed rule are also addressed in the methodology.

In addition to the voluntary consensus standards EPA uses in the proposed 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 proposed 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 proposed 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 proposed 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 now 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 proposed subpart A list the EPA testing methods included in the proposed 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.

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

The proposed rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use" (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 proposed rule could possibly lead to increased electricity consumption as sources may replace existing wet scrubbers with venturi wet scrubbers that require more electricity, the proposed rule would not require that venturi scrubbers be installed, and in fact, there are some alternatives that may decrease electrical demand. Further, the proposed rule would have no effect on the supply or distribution of energy. Although we considered certain fuels as potential bases for MACT, none of our proposed 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.

#### **List of Subjects in 40 CFR Part 63**

Administrative practice and procedure, Air pollution control, Environmental protection, Hazardous substances, Incorporation by reference, Intergovernmental relations, Lime manufacturing, Reporting and recordkeeping requirements.

Dated: November 26, 2002.

**Christine Todd Whitman,**  
*Administrator.*

For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of the Federal Regulations is proposed 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. Section 63.14 is amended by adding paragraphs (b)(27) and (b)(28) to read as follows:

**§ 63.14 Incorporation by reference.**

\* \* \* \* \*

(b) \* \* \*  
 (27) ASTM D6420–99, Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography—Mass Spectrometry (GC/MS), IBR approved [date of publication of the final rule in the **Federal Register**] for § 63.7142.

(28) ASTM D6735–01, Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, IBR approved [date of publication of the final rule in the **Federal Register**] for § 63.7142.

\* \* \* \* \*

3. 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**

**What This Subpart Covers**

Sec.

63.7080 What is the purpose of this subpart?

63.7081 Am I subject to this subpart?

63.7082 What parts of my plant does this subpart cover?

63.7083 When do I have to comply with this subpart?

**Emission Limitations**

63.7090 What emission limitations must I meet?

**General Compliance Requirements**

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

**Testing and Initial Compliance Requirements**

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

63.7111 When must I conduct subsequent performance tests?

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

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

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

**Continuous Compliance Requirements**

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

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

**Notifications, Reports, and Records**

63.7130 What notifications must I submit and when?

63.7131 What reports must I submit and when?

63.7132 What records must I keep?

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

**Other Requirements and Information**

63.7140 What parts of the General Provisions apply to me?

63.7141 Who implements and enforces this subpart?

63.7142 What are the requirements for claiming area source status?

63.7143 What definitions apply to this subpart?

**Tables to Subpart AAAAA of Part 63**

Table 1 to Subpart AAAAA of Part 63—Emission Limits

Table 2 to Subpart AAAAA of Part 63—Operating Limits

Table 3 to Subpart AAAAA of Part 63—Initial Compliance with Emission Limitations

Table 4 to Subpart AAAAA of Part 63—Requirements for Performance Tests

Table 5 to Subpart AAAAA of Part 63—Continuous Compliance with Operating Limits

Table 6 to Subpart AAAAA of Part 63—Periodic Monitoring for Compliance with Opacity and Visible Emissions Limits

Table 7 to Subpart AAAAA of Part 63—Requirements for Reports

Table 8 to Subpart AAAAA of Part 63—Applicability of General Provisions to Subpart AAAAA

**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 or beet sugar manufacturing plant.

(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, reconstructed, or new LMP that is located at a major source.

(b) The affected source is the collection of all of the emission units listed in paragraph (c) of this section.

(c) Emission units are lime kilns, lime coolers and materials processing operations (MPO) as defined in paragraph (d) of this section.

(d) Materials processing operations are raw material grinding mills, raw material storage bins, conveying system transfer points, bulk loading or unloading systems, screening operations, bucket elevators and belt conveyors, except as provided by paragraphs (e) through (g) of this section.

(e) Materials processing operations that process only lime product or fuel are not subject to this subpart.

(f) Truck dumping into any screening operation, feed hopper or crusher is not subject to this subpart.

(g) The first emission unit in the sequence of MPO that is subject to this subpart is the raw material storage bin. Any MPO which precedes the raw material storage bin is not subject to this subpart. Furthermore, the first conveyor transfer point subject to this subpart is the transfer point associated with the conveyor transferring material from the raw material storage bin to the next emission unit.

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

(i) [Reserved]

(j) A new affected source is the collection of all emission units listed in paragraph (c) of this section for which construction begins after December 20, 2002, if you met the applicability criteria in § 63.7081 at the time you commenced construction.

(k) An affected source is reconstructed if it meets the criteria for reconstruction defined in § 63.2.

(l) [Reserved]

(m) An affected source is existing if it is not new or reconstructed.

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

(a) If you have a new or reconstructed 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 the [date of publication of the final rule in the **Federal Register**], you must comply with the emission limitations no later than [date of publication of the final rule in the **Federal Register**].

(2) If you start up your affected source after [date of publication of the final

rule in the **Federal Register**], then you must comply with the emission limitations for new and reconstructed affected sources upon startup of your affected source.

(b) If you have an existing LMP, 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 [3 years from the date of publication of the final rule in the **Federal Register**]. The compliance date is site-specific for existing LMP and is the day following completion of all the performance tests required under § 63.7110(a).

(c) If you have 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) Any portion of the LMP that is a new affected source or a reconstructed affected source must be in compliance with this subpart upon startup.

(2) The emission units of the existing LMP subject to emission limitations under this subpart must be in compliance with this subpart within 3 years after the 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 limitation 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) 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 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 3 years after [date of publication of the final rule in the **Federal Register**], according to the provisions in §§ 63.7(a)(2) and 63.7114.

(b) If you commenced construction or reconstruction of an LMP between December 20, 2002 and [date of publication of the final rule in the **Federal Register**], you must demonstrate initial compliance with either the proposed emission limitation or the promulgated emission limitation no later than 180 calendar days after [date of publication of the final rule in the **Federal Register**] 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 [date of publication of the final rule in the **Federal Register**], 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 3 years after [date of publication of the final rule in the **Federal Register**] or after startup of the source, whichever is later, according to §§ 63.7(a)(2)(ix) and 63.7114.

(d) For each emission limitation 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 performance test(s), and ends at 3:01 a.m. on the same day.

(e) For each emission limitation 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 tests, 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 visible emission 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 the lime kiln (and the 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, kg/Mg (lb/ton) of stone feed.

$C_k$  = Concentration of PM in the kiln effluent, g/dscm (grain/dscf).

$Q_k$  = Volumetric flow rate of kiln effluent gas, dscm/hr (dscf/hr).

$C_c$  = Concentration of PM in the cooler effluent, g/dscm (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, dscm/hr (dscf/hr). This value is zero if there is not a separate cooler exhaust to the atmosphere.

P = Stone feed rate, Mg/hr (ton/hr).

K = Conversion factor, 1000 g/kg (7000 grains/lb).

(f) The combined particulate emission rate from all kilns and coolers within an existing affected source at an LMP must be calculated 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 at an existing LMP, kg/Mg (lb/ton) of stone feed.

$E_i$  = Emission rate of PM from kiln i, or from kiln/cooler combination i, kg/Mg (lb/ton) of stone feed.

$P_i$  = Stone feed rate to kiln i, Mg/hr (ton/hr).

n = Number of existing kilns at the existing affected source.

(g) The combined particulate emission rate from all new or reconstructed kilns and coolers 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:

$E_{TN}$  = Emission rate of PM from all kilns and coolers at a new or reconstructed LMP, kg/Mg (lb/ton) of stone feed.

$E_j$  = Emission rate of PM from kiln j, or from kiln/cooler combination j, kg/Mg (lb/ton) of stone feed.

$P_j$  = Stone feed rate to kiln j, Mg/hr (ton/hr).

m = Number of kilns and kiln/cooler combinations within the new or reconstructed affected source.

(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, if requested.

(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 rolling 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 MPO that is subject to a visible emission (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 than 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 Method 9 in appendix A to part 60 of this chapter, but must meet the training requirements as described in Method 22 in appendix A to part 60 of this chapter.

**§ 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 40 CFR part 63, subpart A, General Provisions and according to PS-1 of appendix B to part 60 of this chapter.

(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 three of four equally spaced data values for that hour from a CPMS that is not out of control according to your OM&M plan.

(3) To calculate the 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). The 3-hour rolling average is updated each hour.

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

(5) You must operate and maintain the CPMS in continuous operation according to the OM&M plan.

(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 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, you must meet any applicable requirements in paragraphs (a)(1) through (5) and (d)(1) through (8) of this section.

(1) The bag leak detection system 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 bag leak detection system must provide output of relative PM emissions.

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

(6) Bag leak detection systems must be installed, operated, adjusted, and maintained so that they follow 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 fabric filter has been inspected and found to be in good operating condition.

(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), detectors may share the system instrumentation and alarm.

(6) Particulate matter detectors must be installed, operated, adjusted, and maintained so that they follow 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 PS-1 of appendix B to part 60 of this chapter.

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

(a) You must demonstrate initial compliance with each emission limitation in Table 1 to this subpart that applies to you, according to Table 3 to this subpart.

(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.

(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, and required quality assurance or control activities (including, as applicable, calibration checks and required zero adjustments), you must monitor continuously (or collect data at all required intervals) at all times that the emission unit is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

### § 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) During periods of startup, shutdown, and malfunction, you must operate in accordance with the SSMP.

(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 MPO subject to an opacity limitation as specified in Table 1 to this subpart, and any vents from buildings subject to an opacity limitation, 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 visible emissions, 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 Method 9 in appendix A to part 60 of this chapter, but must meet the training requirements as described in Method 22 of appendix A to part 60 of this chapter.

## 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 [date of publication of the final rule in the **Federal Register**], you must submit an Initial Notification not later than 120 calendar days after [date of publication of the final rule in the **Federal Register**].

(c) As specified in § 63.9(b)(3), if you startup your new or reconstructed affected source on or after [date of publication of the final rule in the **Federal Register**], you must submit an Initial Notification not later than 120 calendar days after you startup 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 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 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 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 are no deviations from any emission limitations (emission limit, operating limit, opacity limit, and VE limit) that apply to you, a statement that there were no deviations from the emission limitations during the reporting period.

(6) If there were no periods during which the operating parameter monitoring systems was out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during the which the continuous monitoring system (CMS) was 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. This includes periods of startup, shutdown, and malfunction.

(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 (12) 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 deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to 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) An identification of each HAP that was monitored at the affected source.

(9) A brief description of the process units.

(10) A brief description of the CMS.

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

(12) 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 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 on site 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?

(a) 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 AAAAA, as indicated in the "Explanations" column in Table 8, subpart AAAAA takes precedence.

(b) [Reserved]

##### § 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 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 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 (incorporated by reference—see § 63.14), 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 (incorporated by reference—see § 63.14).

(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:

$$RSD_a = (100) \text{ Absolute Value } \left[ \frac{C1_a - C2_a}{C1_a + C2_a} \right] \quad (\text{Eq. 1})$$

Where:

$RSD_a$  = The test run relative standard deviation of sample pair a, percent.  
 $C1_a$  and  $C2_a$  = The HCl concentrations, 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,  $\geq 3$ .

(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 (incorporated by reference—see § 63.14) is conducted, and the percent recovery is calculated according to section 12.6 of ASTM Method D6735-01 (incorporated by reference—see § 63.14).

(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), (incorporated by reference—see § 63.14), 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 (incorporated by reference—see § 63.14);

(ii) The target concentration is between 150 parts per billion by volume and 100 ppmv;

(iii) For target compound(s) not listed in Table 1.1 of ASTM D6420-99 (incorporated by reference—see § 63.14), 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 (incorporated by reference—see § 63.14), 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 (incorporated by reference—see § 63.14), and not amenable to detection by mass spectrometry, ASTM D6420-99 (incorporated by reference—see § 63.14) may not be used.

**§ 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* means the monitoring device and system for a fabric filter that identifies an increase in PM emissions resulting from a broken filter bag or other malfunction and sounds an alarm.

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

*Bucket elevator* means a *material* 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 generated by one or more process operations 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 *material* 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 permitted by this subpart.

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

*Emission unit* means a *lime kiln*, *lime cooler*, raw material *grinding mill*, raw material *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.

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

*Hydrator* means the device used to produce hydrated lime or calcium hydroxide via the chemical reaction of the *lime product* and 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).

*Material* means the raw *limestone* or stone feed used at an LMP.

*Materials processing operation (MPO)* means the equipment and transfer points between the equipment used to prepare, process, or transport *limestone*, or stone feed, and includes *grinding mills*, raw material *storage bins*, conveying system transfer points, bulk loading or unloading systems, screening operations, *bucket elevators*, and *belt conveyors*.

*Particulate matter (PM) detector* means the monitoring device and system for an ESP that identifies relative levels in PM emissions and sounds an alarm at a preset level.

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

*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 emission* means the PM that is released to the atmosphere from a *capture system*.

*Stone feed* means the *limestone* feedstock and mill scale or other iron oxide additives that are fed to the *lime kiln*. Stone feed does not include the fuels used in the lime kiln to produce the heat needed to calcine the *limestone* into the *lime product*.

*Storage bin* means a facility for storage (including surge bins) of *material* prior to further processing or loading.

*Transfer point* means a point in a conveying operation where the material is transferred to or from a *belt conveyor* (except where the *material* is being transferred to a stockpile).

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

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

**Tables to Subpart AAAAA of Part 63**

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

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

For . . .	You must meet the following emission limitation . . .
1. All lime kilns and their associated lime coolers at an existing LMP . . .	The sum of the PM emissions from all of the kilns and associated lime coolers must not exceed 0.06 kilograms per megagram (kg/Mg) (0.12 pounds per ton) of stone feed.
2. All lime kilns and their associated lime coolers at a new or reconstructed LMP.	The sum of the PM emissions from all of the kilns and associated lime coolers must not exceed 0.05 kg/Mg (0.10 pounds per ton) of stone feed.
3. Stack emissions from all MPO at a new, reconstructed or existing affected source.	PM emissions must not exceed 0.05 grams per dry standard cubic meter (g/dscm).
4. Stack emissions from all MPO at a new, reconstructed or existing affected source, unless the stack emissions are discharged through a wet scrubber control device.	Emissions must not exceed 7 percent opacity.
5. Fugitive emissions from all MPO at a new, reconstructed or existing affected source, except as provided by item 6 of this Table 1.	Emissions must not exceed 10 percent opacity.
6. All MPO at a new, reconstructed or existing affected source enclosed in a building.	All of the individually affected MPO must comply with the applicable PM and opacity emission limitations in items 3 through 5 of this Table 1, or the building must comply with the following: there must be no visible emissions from the building, except from a vent; and vent emissions must not exceed the stack emissions limitations in items 3 and 4 of this Table 1.

TABLE 1 TO SUBPART AAAAA OF PART 63.—EMISSION LIMITS—Continued  
 [You must meet each emission limit in the following table that applies to you, as required in § 63.7090(a)]

For . . .	You must meet the following emission limitation . . .
7. Each fabric filter that controls emissions from only an individual, enclosed storage bin.	Emissions must not exceed 7 percent opacity.
8. Each set of multiple storage bins at a new, reconstructed or existing affected source, with combined stack emissions.	You must comply with the emission limits in items 3 and 4 of this Table 1.

TABLE 2 TO SUBPART AAAAA OF PART 63.—OPERATING LIMITS  
 [You must meet each operating limit in the following table that applies to you, as required in § 63.7090(b)]

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 a fabric filter.	Maintain and operate the fabric filter such that the bag leak 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 the requirements in § 63.7113(d) and (f) and Table 5 to this subpart. In lieu of a bag leak detector, maintain the fabric filter 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 rolling 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; and maintain the 3-hour rolling average 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 .....	Maintain the 3-hour rolling average current and voltage input to each electrical field of the ESP greater than or equal to the average current and voltage input to each field of the ESP established during the most recent performance test; or, in lieu of complying with these ESP parameter operating limits, 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 materials processing operation subject to a PM limit which uses a wet scrubber.	Maintain the 3-hour rolling 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 rolling average scrubbing liquid flow rate greater than or equal to the flow rate operating limit established during the performance test.
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.	(1) 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 a fabric filter. (2) Operate each capture/collection system according to the procedures and requirements in the OM&M plan.

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

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

For . . .	For the emission limitation . . .	You have demonstrated initial compliance, if after following the requirements in § 63.7112 . . .
1. All lime kilns and their associated lime coolers at a new or reconstructed affected source and all lime kilns and their associated lime coolers at an existing affected source.	If the lime cooler associated with the kiln has no separate exhaust to the atmosphere, PM emissions from all kilns and coolers at an existing LMP must not exceed 0.06 kg PM per Mg of stone feed (0.12 lb PM per ton of stone feed); PM emissions from all kilns and coolers at a new or reconstructed LMP must not exceed 0.05 kg PM per Mg of stone feed (0.10 lb PM per ton of stone feed); if a lime cooler associated with a kiln has a separate exhaust to the atmosphere, the sum of all kiln and cooler PM emissions must not exceed 0.06 kg/Mg (0.12 pounds per ton) of stone feed for existing LMP and 0.05 kg/Mg (0.1 pounds per ton) of stone feed for kilns at new or reconstructed LMP.	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 the initial performance test, do not exceed the emission limit; if the lime kiln is controlled with an ESP (and you are not opting to monitor PM emissions from the ESP with a PM detector or COMS) or wet scrubber, you have a record of the applicable operating parameters over the 3-hour performance test during which emissions did not exceed the emissions limitation; if the lime kiln is controlled by a fabric filter or ESP and you are opting to monitor PM emissions from the ESP with a PM detector or you are opting to monitor PM emissions from the fabric filter with a bag leak 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 a fabric filter or ESP and you are opting to monitor PM emissions using a COMS, you have installed and are operating the monitoring device according to the requirements in § 63.7113(g).
2. Stack emissions from all MPO at a new, reconstructed 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 MPO at a new, reconstructed 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.
4. Fugitive emissions from all MPO at a new, reconstructed 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 MPO at a new, reconstructed or existing affected source, enclosed in a building.	All of the individually affected MPO 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 visible emissions 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 MPO 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 visible emissions 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.
6. Each fabric filter 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 the 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

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

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 §63.7(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 limit 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) at the highest production level reasonably expected to occur; the minimum sampling volume must be 0.85 dscm (30 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 fabric filter or ESP.	Measure PM emissions .....	Method 5D in appendix A to part 60 of this chapter.	Conduct the test(s) at the highest production level reasonably expected to occur; 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 $\pm 5$ percent of the mass rate over its operating range.
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 an ESP, except ESP monitored with a PM detector in lieu of monitoring ESP parameters.	Establish the operating limits for the average current and the average voltage supplied to each field of the ESP.	The ESP operating data during the kiln PM performance test.	You must collect the current and voltage data during the period of the performance test and determine the operating limits for both parameters according to 63.7112(j).

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

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

For . . .	You must . . .	Using . . .	According to the following requirements . . .
11. (a) Each lime kiln equipped with a fabric filter or ESP that is monitored with a PM detector.	Have installed and have operating the bag leak detector or PM detector, respectively 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. (b) Each lime kiln equipped with a fabric filter 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.	According to the requirements in § 63.7113(g).
12. Each stack emission from an MPO, vent from a building enclosing an MPO, 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 an MPO, vent from a building enclosing an MPO, 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 an MPO 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 MPO 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 average level.
15. Each stack emissions source from an MPO 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 MPO 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(c).
16. Each fabric filter 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 MPO 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 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.

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

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

For . . .	You must . . .	Using . . .	According to the following requirements . . .
18. Each building enclosing any MPO, 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 materials processing 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

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

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 rolling 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 rolling 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 according to all applicable requirements in §63.7113 and reducing the data according to §63.7113(a); maintaining the 3-hour rolling 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 rolling 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 hour rolling device must be accurate within ±1%).
2. Each lime kiln or lime cooler equipped with a fabric filter and using a bag leak detector, and each lime kiln equipped with an ESP using a PM detector in lieu of ESP parameter monitoring.	a. Maintain and operate the fabric filter or ESP such that the bag leak or PM detector alarm, respectively, is not activated and alarm condition does not exist for more than 5 percent of the total operating time in a 6-month period.	(i) Operating the fabric filter or ESP so that the alarm on the bag leak or PM detection system, respectively, is not activated and 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 bag leak or PM detection system. (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 fabric filter or ESP system demonstrates that no corrective actions are necessary, no alarm time will be counted.
3. Each lime kiln equipped with an ESP, except an ESP monitoring PM with a PM detector or COMS.	Maintain the 3-hour rolling average current and voltage input to each electrical field of the ESP greater than or equal to the average current and voltage input to each field of the ESP established during the performance test.	Collecting the ESP operating data according to all applicable requirements in §63.7113 and reducing the data according to §63.7113(a), and maintaining the 3-hour rolling average voltage input and current input to each field greater than or equal to voltage input and current input operating limits for each field established during the performance test.

TABLE 5 TO SUBPART AAAAA OF PART 63—CONTINUOUS COMPLIANCE WITH OPERATING LIMITS—Continued  
 [You must demonstrate continuous compliance with each operating limit that applies to you, according to the following table, as required in § 63.7121]

For . . .	For the following operating limit . . .	You must demonstrate continuous compliance by . . .
4. Each stack emissions source form a MPO subject to an opacity limit, which is controlled by a wet scrubber.	Maintain the 3-hour rolling 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 rolling 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 rolling 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 rolling 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 $\pm 1\%$ and the continuous pressure drop measurement device must be accurate within $\pm 1\%$ ).
5. For each lime kiln or lime cooler equipped with a fabric filter or an ESP that uses a COMS as the monitoring device.	a. Maintain and operate the fabric filter or ESP such that the average opacity for any 6-minute block period does not exceed 15 percent.	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. 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

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

For . . .	For the following emission limitation . . .	You must demonstrate ongoing compliance . . .
1. Each MPO subject to an opacity limitation as required in Table 1 to this subpart, or any vents from buildings subject to an opacity limitation.	a. 7–15 percent opacity, depending on the materials processing operation, as required in Table 1 to this subpart.	(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.

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

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

For . . .	For the following emission limitation . . .	You must demonstrate ongoing compliance . . .
<p>2. Any building subject to a VE limit, according to item 6 of Table 1 to this subpart.</p>	<p>a. No VE .....</p>	<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 according MPO are in operation.</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.</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

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

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



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

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

You must submit a . . .	The report must contain . . .	You must submit the report . . .
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.	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 .....	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.	The information in § 63.10(d)(5)(ii) .....	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

[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.	§§ 63.7081 and 63.7142 specify additional applicability determination requirements.
63.1(a)(5) .....	Applicability .....	No.	
63.1(a)(6) .....	Applicability .....	Yes.	
63.1(a)(7)–(a)(9) .....	Applicability .....	No.	
63.1(a)(10)–(a)(14) .....	Applicability .....	Yes.	
63.1(b)(1) .....	Initial Applicability Determination .....	Yes .....	
63.1(b)(2) .....	Initial Applicability Determination .....	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 .....	
63.1(c)(3) .....	Extensions, Notifications .....	No.	Additional definition in § 63.7143.
63.1(c)(4)–(5) .....	Extensions, Notifications .....	Yes.	
63.1(d) .....	Definitions .....	No.	
63.1(e) .....	Applicability of Permit Program .....	Yes.	
63.2 .....	Units and Abbreviations .....	Yes.	
63.3(a)–(c) .....	Prohibited Activities .....	Yes.	
63.4(a)(1)–(a)(2) .....	Prohibited Activities .....	Yes.	
63.4(a)(3)–(a)(5) .....	Circumvention, Severability .....	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) .....	Compliance Dates .....	No.	
63.5(b)(3)–(4) .....	Construction Approval, Applicability .....	Yes.	
63.5(b)(5) .....	Construction Approval, Applicability .....	No.	
63.5(b)(6) .....	Applicability .....	Yes.	
63.5(c) .....	Approval of Construction/Reconstruction .....	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) .....	Compliance Dates .....	No.	
63.6(b)(7) .....	Compliance Dates .....	Yes.	
63.6(c)(1)–(2) .....	Compliance Dates .....	Yes.	
63.6(c)(3)–(c)(4) .....	Compliance Dates .....	No.	
63.6(c)(5) .....	Compliance Dates .....	Yes.	
63.6(d) .....	Compliance Dates .....	No.	
63.6(e)(1) .....	Operation & Maintenance .....	Yes .....	See also § 63.7100 for OM&M requirements.
63.6(e)(2) .....	Operation & Maintenance .....	No.	
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) .....	Opacity/VE Standards .....	No.	

TABLE 8 TO SUBPART AAAAA OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART AAAAA—Continued  
 [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(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	No	No COM required under subpart AAAAA.
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)	Extension of Compliance	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 also §63.7113.
63.8(a)(2)	Monitoring	Yes.	
63.8(a)(3)	Monitoring	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	No	No COM or CEMS are required under subpart AAAAA; see §63.7113 for CPMS requirements.
63.8(c)(5)	Minimum COM procedures	No	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 also §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)	Notification of Compliance Status	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.	
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.	

TABLE 8 TO SUBPART AAAAA OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART AAAAA—Continued  
 [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(d)(2) .....	Performance Test Results .....	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)(3) .....	Opacity or VE Observations .....	Yes .....	
63.10(d)(4) .....	Progress Reports .....	Yes.	See specific requirements in subpart AAAAA, see §63.7131.
63.10(d)(5) .....	Startup, Shutdown, Malfunction Reports .....	Yes.	
63.10(e) .....	Additional CMS Reports .....	No .....	
63.10(f) .....	Waiver for Recordkeeping/Reporting .....	Yes.	Flares not applicable.
63.11(a)–(b) .....	Control Device Requirements .....	No .....	
63.12(a)–(c) .....	State Authority and Delegations .....	Yes.	ASTM 6420–99 and 6735–01 (see §63.14).
63.13(a)–(c) .....	State/Regional Addresses .....	Yes.	
63.14(a)–(b) .....	Incorporation by Reference .....	Yes.	
63.15(a)–(b) .....	Availability of Information .....	Yes.	

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