



# 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 From the  
Portland Cement Manufacturing Industry;  
Proposed Rule**

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 63**

[OAR–2002–0051; FRL–8003–6]

RIN 2060–AJ78

**National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry**

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

**ACTION:** Proposed rule; amendments.

**SUMMARY:** On June 14, 1999, under the authority of section 112 of the Clean Air Act (CAA), the EPA promulgated national emission standards for hazardous air pollutants (NESHAP) for new and existing sources in the portland cement manufacturing industry. On December 15, 2000, the United States Court of Appeals for the District of Columbia Circuit (DC Circuit) remanded parts of the NESHAP for the portland cement manufacturing industry to EPA to consider, among other things, setting maximum achievable control technology (MACT) floor standards for hydrogen chloride (HCl), mercury, and total hydrocarbons (THC), and beyond-the-floor standards for metal hazardous air pollutants

(HAP). This action provides EPA’s proposed rule amendments in response to those aspects of the court’s remand.

**DATES:** *Comments.* Written comments must be received on or before January 17, 2006.

*Public Hearing.* If anyone contacts the EPA requesting to speak at a public hearing by December 12, 2005, a public hearing will be held within approximately 15 days following publication of this notice in the **Federal Register**.

**ADDRESSES:** *Comments.* Submit your comments, identified by Docket ID No. OAR–2002–0051, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the on-line instructions for submitting comments.
- *Agency Web site:* <http://www.epa.gov/edocket>. EDOCKET, EPA’s electronic public docket and comment system, is EPA’s preferred method for receiving comments. Follow the on-line instructions for submitting comments.
- *E-mail:* [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov).
- *Fax:* (202) 566–1741.
- *Mail:* U.S. Postal Service, send comments to: EPA Docket Center (6102T), Attention Docket ID No. OAR–2002–0051, 1200 Pennsylvania Avenue, NW., Washington, DC 20460. Please include a duplicate copy, if possible.

- *Hand Delivery:* In person or by courier, deliver comments to: EPA Docket Center (6102T), Attention Docket ID No. OAR–2002–0051, 1301 Constitution Avenue, NW., Room B–108, Washington, DC 20004. Such deliveries are only accepted during the Docket’s normal hours of operation, and special arrangements should be made for deliveries of boxed information. Please include a duplicate copy, if possible.

We request that you also send a separate copy of each comment to the contact person listed below (see **FOR FURTHER INFORMATION CONTACT**).

*Public Hearing.* If a public hearing is held, it will be held at 10 a.m. at the EPA Facility Complex in Research Triangle Park, North Carolina or at an alternate site nearby.

**FOR FURTHER INFORMATION CONTACT:** Mr. Keith Barnett, EPA, Office of Air Quality Planning and Standards, Emission Standards Division, Minerals and Inorganic Chemicals Group (C504–05), Research Triangle Park, NC 27711; telephone number (919) 541–5605; facsimile number (919) 541–5600; e-mail address [barnett.keith@epa.gov](mailto:barnett.keith@epa.gov).

**SUPPLEMENTARY INFORMATION:** *Regulated Entities.* Entities potentially affected by this action are those that manufacture portland cement. Regulated categories and entities include:

TABLE 1.—REGULATED ENTITIES TABLE

Category	NAICS <sup>1</sup>	Examples of regulated entities
Industry .....	32731	Owners or operators of portland cement manufacturing plants.
State .....	32731	Owners or operators of portland cement manufacturing plants.
Tribal associations .....	32731	Owners or operators of portland cement manufacturing plants.
Federal agencies .....	None	None.

<sup>1</sup> North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that may potentially be regulated by this action. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in 40 CFR 63.1340 of the rule. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

*Docket.* The EPA has established an official public docket for this action under Docket ID Number OAR–2002–0051. The official public docket is the collection of materials that is available for public viewing both electronically

and in printed form. This docket is available electronically through EPA Dockets at <http://www.epa.gov/edocket>. You may access the docket electronically to submit or view public comments, access the index of the contents of the official public docket, and access those documents in the public docket that are available electronically. Once in the system, select “search” and key in the appropriate docket identification number.

The docket is also available in printed form at EPA, 1301 Constitution Avenue, NW., Room B–102, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566–1744.

The telephone number for the EPA Docket Center is (202) 566–1742. A reasonable fee may be charged for copying docket materials.

For public commenters, it is important to note that EPA’s policy is that public comments, whether submitted electronically or on 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, confidential business information (CBI), or other information whose disclosure is restricted by statute. Information claimed as CBI and other information whose disclosure is restricted by statute, will not be available for public viewing in EPA’s public docket. When EPA identifies a comment containing

copyrighted material, EPA will provide a reference to that material, but not the material itself, in the version of the comments that is placed in EPA's electronic public docket. The entire printed comment, including the copyrighted material, will be available in the printed public docket. Although not all docket materials may be available electronically, you may still access any of the publicly available docket material through the docket facility identified in this document.

Public comments submitted on computer disks that are mailed or delivered to the docket will be transferred to EPA's electronic public docket. Hardcopy 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. *Tips for preparing your 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 received after the close of the comment period will be marked late. The EPA is not required to consider these late comments.

Our preferred method for receiving comments is electronically through EPA Dockets at <http://www.epa.gov/edocket>. The system is an anonymous access system, which means we will not know your identity, e-mail address, or other contact information unless you provide it in the body of your comment.

In contrast to EPA's electronic public docket, our 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, our e-mail system automatically captures your e-mail address. E-mail addresses that are automatically captured by our 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.

If you submit an electronic comment, we recommend 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. The 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.

*Submitting comments containing CBI.* Do not submit information that you consider to be CBI electronically through EDOCKET, regulations.gov, or e-mail. Send or deliver information identified as CBI only to the following address: OAQPS Document Control Office (C404-02), Attention: Keith Barnett, EPA, Research Triangle Park, NC 27711, Attention Docket ID No. OAR-2002-0051. 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. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket.

*Worldwide Web (WWW).* In addition to being available in the docket, an electronic copy of today's proposal will also be available through the WWW. Following the Administrator's signature, a copy of this action will be posted on EPA's Technology Transfer Network (TTN) policy and guidance page for newly proposed or promulgated rules at <http://www.epa.gov/ttn/oarpg/>. The TTN at EPA's Web site provides information and technology exchange in various areas of air pollution control.

*Public Hearing.* Persons interested in presenting oral testimony or inquiring as to whether a hearing is to be held should contact Ms. Janet Eck, EPA, Office of Air Quality Planning and Standards, Emission Standards Division, Coatings and Consumer Products Group (C539-03), Research Triangle Park, North Carolina 27711, telephone number (919) 541-7946, e-mail address: [eck.janet@epa.gov](mailto:eck.janet@epa.gov), at

least 2 days in advance of the potential date of the public hearing. Persons interested in attending the public hearing must also call Ms. Eck 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.

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

- I. Background
- II. Summary of the *National Lime Association v. EPA* Litigation
- III. EPA's Proposed Response to the Remand
  - A. Determination of MACT for Mercury Emissions
  - B. Determination of MACT for HCl Emissions
  - C. Determination of MACT for THC Emissions
  - D. Evaluation of a Beyond-the-Floor Control Option for Non-Volatile HAP Metal Emissions
- IV. Other Issues on Which We are Seeking Comment
- V. Summary of Environmental, Energy, and Economic Impacts
  - A. What facilities are affected by the proposed amendment?
  - B. What are the air quality impacts?
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  - D. What are the solid waste impacts?
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  - F. What are the cost impacts?
  - G. What are the economic impacts?
- VI. Statutory and Executive Order Reviews
  - A. Executive Order 12866, Regulatory Planning and Review
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  - C. Regulatory Flexibility Analysis
  - D. Unfunded Mandates Reform Act
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  - G. Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks
  - H. Executive Order 13211, Actions That Significantly Affect Energy Supply, Distribution, or Use
  - I. National Technology Transfer and Advancement Act

## I. Background

Section 112(d) of the CAA requires EPA to set emissions standards for major stationary sources based on performance of the MACT. The MACT standards for existing sources must be at least as stringent as the average emissions limitation achieved by the best performing 12 percent of existing sources or the best performing five sources for source categories with less than 30 sources (CAA section 112(d)(3)(A) and (B)). This level is called the MACT floor. For new sources, MACT standards must be at least as stringent as the control level achieved in practice by the best controlled similar

source (CAA section 112(d)(3)). The EPA also must consider more stringent "beyond-the-floor" control options. When considering beyond-the-floor options, EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account costs, energy, and nonair environmental impacts when doing so.

On June 14, 1999 (64 FR 31898), in accordance with these provisions, EPA published the final rule entitled "National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry" (40 CFR part 63, subpart LLL).<sup>1</sup>

The legacy public docket for the final rule is Docket No. A-92-53. The final rule provides protection to the public by requiring portland cement manufacturing plants to meet emission standards reflecting the performance of the MACT. Specifically, the final rule established MACT-based emission limitations for particulate matter (as a surrogate for non-volatile HAP metals), dioxins/furans, and for greenfield<sup>2</sup> new sources, THC (as a surrogate for organic HAP). We considered, but did not establish limits for, THC for existing sources and HCl or mercury for new or existing sources. In response to the mandate of the District of Columbia Circuit arising from litigation summarized below in this preamble, we are proposing emission limitations reflecting MACT for these pollutants in today's action.

We have previously amended the Portland Cement NESHAP. Consistent with the terms of a settlement agreement between the *American Portland Cement Alliance v. EPA*, EPA adopted final amendments and clarifications to the rule on April 5, 2002 (76 FR 16614), July 5, 2002 (67 FR 44766), and December 6, 2002 (67 FR 72580). These amendments generally relate to applicability, performance testing, and monitoring. In today's action, we are also proposing to further amend the rule to re-insert two paragraphs relating to the applicability of the portland cement new source performance standards that were deleted in error in a previous amendment.

<sup>1</sup> Cement kilns which burn hazardous waste are in a separate class of source, since their emissions differ from portland cement kilns as a result of the hazardous waste inputs. Rules for hazardous waste-burning cement kilns are found at subpart EEE of part 63.

<sup>2</sup> A new greenfield kiln is a kiln constructed prior to March 24, 1998 at a site where there are no existing kilns.

## II. Summary of the National Lime Association v. EPA Litigation

Following promulgation of the NESHAP for portland cement manufacturing, the National Lime Association and the Sierra Club filed petitions for review of the standards in the DC Circuit. The American Portland Cement Alliance, although not a party to the litigation, filed a brief with the court as *amicus curiae*. The court denied essentially all of the petition of the National Lime Association, but granted part of the Sierra Club petition.

In *National Lime Association v. EPA*, 233 F. 3d 625 (DC Cir. 2000), the court upheld EPA's determination of MACT floors for particulate matter (PM) (as a surrogate for non-volatile HAP metals) and for dioxin/furan. However, the court rejected EPA's determination that it need not determine MACT floors for the remaining HAP emitted by these sources, namely, mercury, other organic HAP (for which THC are a surrogate), and HC1 (233 F. 3d at 633). The court specifically rejected the argument that EPA was excused from establishing floor levels because no "technology-based pollution control devices" exist to control the HAP in question (*Id.* at 634). The court noted that EPA is also specifically obligated to consider other pollution-reducing measures including process changes, substitutions of materials inputs, or other modifications (*Id.*). The court remanded the rule to EPA to set MACT floor emission standards for HC1, mercury, and THC.

The Sierra Club also challenged EPA's decision not to set beyond-the-floor emission limits for mercury, THC, and non-volatile HAP metals (for which PM is a surrogate). The court only addressed the absence of beyond-the-floor emission limits for non-volatile HAP metals since EPA was already being required to reconsider MACT floor emission standards for mercury, THC, and HC1, and thus, by necessity, also must consider whether to adopt beyond-the-floor standards for these HAP. The Sierra Club argued, and the court agreed, that in considering beyond-the-floor standards for non-volatile HAP metals, EPA considered cost and energy requirements but did not consider nonair quality health and environmental impacts as required by the CAA (*Id.* at 634-35). The court also found EPA's analysis of beyond-the-floor standards deficient in its assertion that there were no data to support fuel switching (switching to natural gas) as a viable option of reducing emissions of non-volatile HAP metals (*Id.* at 635).

## III. EPA's Proposed Response to the Remand

### A. Determination of MACT for Mercury Emissions

During development of the original NESHAP for portland cement manufacturing, we conducted MACT floor and beyond-the-floor analyses for kiln and in-line kiln/raw mill mercury emissions (63 FR 14182, March 24, 1998 and 64 FR 31898, June 14, 1999). Although considered a metal HAP, mercury's volatile nature precludes its control through application of typical PM controls such as fabric filters (FF) or electrostatic precipitators (ESP). At the time of the original rulemaking, we considered establishing an emission limit based on the use of activated carbon injection because a form of this control technology was demonstrated on medical waste incinerators and municipal waste combustors and was being used at one cement plant to reduce opacity from two non-hazardous waste (NHW) kilns. However, the placement of the carbon injection system ahead of the kiln PM control device (the configuration in use at these kilns) and the practice of recycling the cement kiln dust (CKD) collected by the PM control device back to the kiln, meant that the mercury was being revaporized and ultimately emitted to the atmosphere. Thus, the carbon injection systems alone did not control mercury emissions, and we concluded that carbon injection in this configuration could not be used as a basis for establishing a mercury emissions MACT floor for new or existing kilns (63 FR 14202, March 24, 1999). Our conclusion that the single instance of an activated carbon injection system used at a portland cement plant, and the way in which it was used, could not provide the basis for a MACT floor was not contested by the petitioners.

We also conducted a beyond-the-floor analysis of using activated carbon injection with an additional PM control device to reduce mercury emissions. Costs for the system would include the cost of the carbon injection system and an additional FF to collect the carbon separately from the CKD. Based on the low levels of mercury emissions from individual portland cement kilns, as well as the high cost per ton of mercury removed by the carbon injection/FF system, we determined that this beyond-the-floor option was not justified (63 FR 14202, March 24, 1998). The petitioners also did not take issue with this conclusion.

We did receive comments on the proposed NESHAP for portland cement manufacturing suggesting that fuel and/

or feed material switching or cleaning be considered as a means for reducing mercury emissions. In our response to these comments, we explained that feed and/or fossil-fuel switching or cleaning would be considered beyond-the-floor options. We also stated that we lacked data, and none were provided by the commenters, showing that such an option would consistently decrease mercury emissions.

As directed in the court remand, we have reconsidered the issue of MACT floor standards for mercury. We still find that, for existing and new kilns, the MACT floor for mercury is no additional emissions reductions.

We considered simply determining a floor based on the median of the 12 percent of kilns demonstrating the lowest mercury emissions during a performance test. However, an emissions limit established by this method would reflect emission levels resulting from fuels/raw materials fortuitously available at the time of the performance test. These levels could not be replicated by the source conducting the test and could not be duplicated by other sources in the source category, unless they had access to the same fuels and raw materials available at the time of the emissions test (which of course, would never occur). Therefore, we could not demonstrate that any emission limit developed by this method would be achievable on a continuous basis without limiting sources to the same fuels and raw materials available during the performance test.

We then examined the feasibility of using limits on the mercury content of the fuel and feed to the kiln. Mercury air emissions from portland cement manufacturing kilns originate from the feed materials (e.g., limestone, clay, shale, and sand, among others) and fossil fuels (e.g., coal, oil). In general, the amount of mercury emitted by a portland cement manufacturing kiln is proportional to the amount of mercury in the fuel and feed materials due to the volatile nature of mercury at the temperatures encountered in a cement kiln.

Based on available data, the only feed material that contributes to mercury emissions is limestone, which is the main ingredient in portland cement production. The mercury content of limestone has been reported by the United States Geological Survey to range from 0.01 to 0.1 parts per million (ppm) and by the United States Bureau of Mines to range from 0.02 to 2.3 ppm. We considered setting an upper bound based on these data. However, we cannot say that these ranges actually

cover the entire range of mercury a source could encounter over time. Therefore, we could not demonstrate that during a performance test a source could meet an emission limit set using these data. In other terms, we know of no way to quantify the variability of a cement kiln's mercury emissions because of the constantly varying concentrations of mercury in raw material inputs. See *Mossville Environmental Action Now v. EPA*, 370 F. 3d 1232, 1241–42 (DC Cir. 2004) (EPA must account for sources' variability in establishing MACT floors).

We also are not sure that a consistent source of low-mercury raw materials exists. We have no information to suggest the widespread availability of low-mercury limestone deposits. As with other trace materials in mineral deposits, mercury concentration varies widely between deposits as well as within deposits.

Due to this variability, and the lack of data showing the general availability of low-mercury limestone, it is infeasible to set an emission limit (floor or otherwise) based on switching to low-mercury feed materials, or to establish some type of work practice mandating use of raw material with some specified properties relating to mercury. There are no data showing that a nationwide supply of low-mercury feed materials exists, and even if it did, the cost of shipping feed materials would preclude the use of this technique. Though costs may not be considered in determining a MACT floor, portland cement plants are typically located at or near a limestone quarry because the economics of the portland cement industry require minimal transportation costs. If we were to now require sources to ship raw low mercury limestone over potentially long distances to reduce mercury emissions, it would change the economics of the plant so significantly that the plant would not be the same class or type of source compared to facilities that happened to have low-mercury limestone located nearby (or, at least, had happened on a vein of low mercury limestone at the time of its performance test). Because limestone's composition varies with location, limestone must be processed locally to be profitable, portland cement plants must formulate the mixture of limestone with other materials to attain the desired composition and performance characteristics of their product, and access to limestone is exclusive to each portland cement plant (i.e., no plant typically can gain access to another plant's limestone). This exclusivity would preclude plants from mining from a common, low-mercury limestone

quarry. In addition, we expect that even an individual cement kiln's proprietary feed materials would experience significant mercury variability (i.e., within-quarry natural variability), so as mentioned previously, even the same kiln could not be expected to replicate its own mercury emissions results.

We also evaluated the possibility of setting a mercury standard for greenfield new sources based on selection and blending of low-mercury raw materials, similar to the method we used to establish a greenfield limit on THC emissions based on the selection and blending of low-organic containing feed materials (63 FR 14202, March 24, 1998). However, the situation for mercury is different from the situation for THC. In the case of THC, some facilities had already used the selection of low-organic feed materials as a control technique, indicating that this was a feasible technique and that access to suitable low-organic materials exists for greenfield sources. This is not the case for using the selection of a low-mercury feed material. Feed selection to control mercury has not been used in the portland cement industry, and we have found no data (nor has anyone supplied such data) to show that suitable low-mercury feed materials exist for greenfield sites (or for any other type of site). Metal concentrations in limestone (all metals, not just mercury) vary widely both within-quarry and quarry-to-quarry. Given this significant variation in concentration of metals in limestone for a given area, we believe it is implausible to assume the existence of any consistently low-mercury quarry sites.

A secondary source of mercury emitted by portland cement kilns is coal, which portland cement plants burn as their primary fuel, with about 90 percent of the total United States kiln capacity using coal, coke, or a combination of coal and coke as the primary fuel. The remainder use natural gas, oil, or some type of nonhazardous waste (such as tire derived fuel) as the primary fuel. The mercury content of coal ranges from 0.0 to 1.3 micrograms per gram ( $\mu\text{g/g}$ ) with an average of approximately 0.09  $\mu\text{g/g}$ . Using the mercury content of coal, coal requirements per ton of feed, heat input requirements, and the ratio of feed to clinker, we estimated the amount of mercury entering model kilns from coal and compared it with the total mercury input to kilns from feed materials. Based on average mercury concentrations of feed materials and coal, the largest contribution of mercury to kilns is from feed materials, which account for between 55 percent and 70 percent of

the mercury. Contributions of mercury from coal account for between 30 percent (model precalciner kiln) and 45 percent (model wet kiln) of the mercury input to kilns.

We further examined the existence and availability of low-mercury coal. In 1999, approximately 91 percent of the coal burned by the electric utility industry was bituminous and subbituminous coal types. Although bituminous and subbituminous coals are now believed to contain less mercury than lignite on a heating value basis, the variability in mercury across coal seams and within coal seams is too high to establish one coal type or selected deposit(s) as a designated low-mercury coal. Furthermore, mercury is not the only trace metal or potential HAP present in coal. When levels of mercury in coal are relatively low, concentrations of other HAP metals and other potential pollutants (such as chlorine, fluorine, and sulfur compounds) may be elevated. The availability of a low-mercury coal to the portland cement industry is even more questionable given the pre-existing supply and transportation relationship with electric utilities. For these reasons, EPA does not consider the use of a low-mercury coal by the portland cement industry a feasible practice, or that any standard based on such a practice would be achievable over time due to constant, uncontrollable variability.

We also considered coal cleaning to reduce the mercury content of coal. However, we have determined that typical coal cleaning is effective for reducing mercury concentrations only in specific coals and, at this time, cannot be considered a mercury control technique for all coals. Advanced coal cleaning techniques are also being investigated for improved mercury removal potential. Like conventional cleaning techniques, the advanced cleaning techniques cannot be considered a mercury control technique for all coals at this time. (Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units—Final Report to Congress, Volume 1, February 1998, pp. 13–36 and 13–37).

We also investigated reducing fuel mercury content by requiring facilities to switch to natural gas. Natural gas can contain trace amounts of mercury when fired, but the level is so low that mercury emissions due to natural gas combustion are essentially zero. Assuming complete conversion to natural gas, we estimated the quantity of natural gas that would be required to fuel the portland cement manufacturing industry. Annual clinker production for

each of the four kiln types and average British thermal unit (Btu) requirements to produce a ton of clinker for each of the kiln types were used to project annual Btu's needed if the portland cement industry switched completely to natural gas. Using an average heating value for natural gas of 1,000 Btu/cubic feet (cu. ft.), the annual clinker production by kiln type, and the average Btu requirements to produce a ton of clinker for each kiln type, we estimated the total nationwide natural gas requirement of the portland cement industry. Assuming a complete conversion to natural gas (as would be necessary if EPA were to adopt a standard reflecting mercury emission levels based on the use of natural gas), the portland cement industry would consume approximately 370 billion cu. ft. of natural gas annually or 1.6 percent of the total United States natural gas consumption (22.8 trillion cu. ft. in the year 2000) and 3.9 percent of total industrial natural gas consumption (9.6 trillion cu. ft.).

Although United States natural gas reserves would likely be adequate most of the time to handle a conversion by the portland cement manufacturing industry to 100 percent natural gas under normal conditions, supply is constrained by the number and production rate of United States wells, which is the source of most of the United States consumption of natural gas. Another obstacle to completely replacing coal with natural gas is the inadequacy of the existing natural gas infrastructure, including storage facilities, the pipeline distribution system, and compression facilities. Natural gas pipelines are relatively scarce in many United States areas compared to other utilities and are not available in all areas in which portland cement manufacturing plants are located. Even where pipelines provide access to natural gas, supplies of natural gas may not be adequate at all times. For example, it is common practice for industrial users to have interruptible contracts for natural gas. An interruptible contract means that the industrial users get the lowest priority for available gas during periods of peak demand, such as the winter months.

For these reasons, reducing fuel mercury content by requiring kilns to switch to natural gas is not feasible on a national basis. We are unable to identify any other potential low-mercury fuel that could serve as the basis of a MACT floor for mercury.

We also considered setting a floor based on a worst case scenario of mercury in the fuel and feed material combined. However, even a worst case

estimate based on the available data would not ensure that a source could consistently meet the standard because there may be situations where a source has an excursion resulting from the inherent variability of the feed/fuel mercury content. We could provide an exception to the standard that would allow the source to exceed the limit by showing its raw materials or fuel contained more mercury than previously thought. However, the result of this approach would be that we would be setting a worse-case standard that is simply a bureaucratic exercise imposing costs (such as costs for permitting, monitoring, and recordkeeping) with no emissions reductions.

We are aware that in specific cases, a source has been able to reduce emissions of mercury by making changes to some of their raw materials. Facilities that are already purchasing materials used as additives or a specific type of coal can make changes that reduce the total mercury input to the kiln. However, as previously discussed, these control techniques are site specific, and we do not believe they can be used as the basis of a national rule. We are also aware that some cement kilns purchase fly ash from utility boilers as an additive feedstock. There is concern that as a result of controlling mercury in utility boilers, the purchased fly ash may now have a higher mercury content than is the current norm. The result would be that mercury emissions reductions achieved by controlling utility boilers would be offset by the release of this previously controlled mercury in a cement kiln when the fly ash is used as an additive. At this time, we are uncertain if the use of fly ash from utility boilers that are controlling their mercury emissions will be significant. One possible solution would be to ban the use of fly ash from a utility boiler that is controlling mercury as an additive to cement kiln feed. We are specifically soliciting comment on a potential ban, or any other methods to address this issue.

Thus, EPA has systematically evaluated all possible means of developing a quantified floor standard for mercury emissions from these sources, both emission control technology and front end feed and fuel control. (See *National Lime*, 233 F. 3d at 634 (finding that EPA had erred in examining only technological (i.e., back-end) controls in considering a level for a mercury floor). We have also been unable to devise any type of work

practice standard that would result in mercury emissions reductions.<sup>3</sup>

It has been argued, however, that when considering floor standards, the means of attaining those standards is legally irrelevant. All that matters, the argument goes, is what emission level was measured in a test result and that such a measurement, by definition, must be considered to have been achieved in practice. The *National Lime Association* and the subsequent *Cement Kiln Recyclers Coalition v. EPA*, 255 F. 3d 855 (DC Cir. 2001) decisions are said to mandate this result.

The EPA disagrees. EPA's position is that "achieved in practice" means achievable over time, since sources are required to achieve the standards at all times. 70 FR at 59436 (Oct. 12, 2005). This position has strong support in the caselaw. *Sierra Club v. EPA*, 167 F. 3d 658, 665 (DC Cir. 1999); *Mossville Environmental Action Now v. EPA*, 370 F. 3d 1232, 1242 (DC Cir. 2004). Here, as just shown, there are no standards which are consistently achievable over time because of sources' inability to control inputs.

Second, *National Lime* and *CKRC* did not involve facts where the levels of performance reflected in performance tests are pure happenstance (composition of HAP in raw materials and fossil fuel used the day the test was conducted), but cannot be replicated or duplicated. Put another way, these cases did not consider situations where means of control are infeasible and where no source can duplicate a quantified level of emissions due to uncontrollable variability of raw materials and fuels. Indeed, the court has rejected standards based on raw material substitution where this means of control is not feasible. (See *Sierra Club v. EPA*, 353 F. 3d 976, 988 (DC Cir. 2004) ("substitution of cleaner ore stocks was not \* \* \* a feasible basis on which to set emission standards. Metallic impurity levels are variable and unpredictable both from mine to mine and within specific ore deposits, thereby precluding ore-switching as a predictable and consistent control strategy").<sup>4</sup> Moreover, the court has

<sup>3</sup> Indeed, most of the options EPA considered are really beyond-the-floor alternatives, because they reflect practices that differ from those now in use by any existing source (including the lowest emitters). (Coal switching, switching to natural gas, and raw material switching are examples.) In EPA's view, a purported floor standard which forces every source in a category to change its practices is a beyond-the-floor standard. Such a standard may not be adopted unless EPA takes into account costs, energy, and nonair environmental impacts.

<sup>4</sup> Although this language arose in the context of a potential beyond-the-floor standard, EPA believes that the principle stated is generally applicable. The

made clear that since standards must be met continuously (i.e., any single test can be a violation of the standard), MACT standards (including floor standards) must reflect maximum daily variability a source can experience in operation, including variability associated with HAP concentrations in raw materials (*Mossville Environmental Action Now v. EPA*, 370 F. 3d at 1242.) Here, as discussed above, that level of variability is beyond the control of any source and thus, cannot be accounted for in a floor standard.

It is argued further, however, that even if individual sources (including those in the pool of best performing sources) cannot reduce HAP concentrations in raw materials and fossil fuels, they may achieve the same reductions by adding back-end pollution control. Applied here, the argument would be that even though no sources (not even the lowest emitters in the individual performance tests) can use fossil fuel or raw material substitution to achieve emission levels for mercury, they could achieve those levels by installing some type of back-end pollution control technology such as activated carbon. The thrust of this argument is essentially to impermissibly bypass the beyond-the-floor factors set out in CAA section 112(d)(2) under the guise of adopting a floor standard. (See note three above.) Suppose that EPA were to adopt a floor standard dominated by emission levels reflecting mercury concentrations present in a few sources' raw materials and fossil fuels during their performance tests. Suppose further that no source in the data base can achieve that floor standard without adding considerable back-end control equipment (at great cost and great additional energy utilization) because test results based on fossil fuel and raw material levels are neither replicable nor duplicable. In this situation, we believe that we would have improperly adopted a beyond-the-floor standard. Because the standard is nominally a floor, we would not have considered the beyond-the-floor factors (cost, energy, and nonair impacts) set out in section 112(d)(2) of the CAA. Yet the standard would force all sources, including those "best performing sources" whose performance ostensibly is the basis for the floor, to retrofit with control devices not presently in use. We can take such action only if the standard is "achievable" under section 112(d)(2),

MACT standards are technology-based, and if there is no technology (i.e., no available means) to achieve a standard, i.e., for a source to achieve a standard whenever it is tested (as the rules require), then the standard is not an achievable one.

meaning justified after considering cost, energy, and nonair environmental impacts.

We evaluated a mercury beyond-the-floor standard for new and existing cement kilns based on use of activated carbon injection (ACI) with an additional PM control device. The total capital cost of an ACI system is estimated to range from \$761,000 to \$5.5 million per kiln. The total annual costs of an ACI system are estimated to range from \$477,000 to \$3.7 million per kiln. These costs include the carbon injection system and an additional baghouse necessary to collect the carbon separately from the CKD. The cost per ton of mercury reduction for ACI applied to cement kilns ranges from \$22.4 million to \$56 million. The use of ACI for mercury control could also result in a co-benefit of additional control of dioxins and furans. However, the current NESHAP for portland cement mandates stringent levels of dioxin emissions based on the floor level of control. Even if ACI further reduces dioxin emissions to zero, the cost would be in the range of \$2 billion to \$7 billion per pound. Therefore, we do not consider the dioxin emission reduction co-benefit to be significant.

We also note that the application of ACI would generate additional solid waste and increase energy use. We estimate that the per kiln impacts would be 95 to 1,600 tons per year (tpy) of solid waste and 526,200 to 9.3 million kilowatt hours (kWhr) of electricity demand.

Based on the relatively low levels of existing mercury emissions from individual NHW cement kilns, the high costs (on both a dollars-per-year and a dollars-per-ton basis) of reducing these emissions by ACI, and the negative nonair environmental impacts, we are proposing that this beyond-the-MACT-floor option for reducing mercury from new and existing NHW kilns is not justified.

#### B. Determination of MACT for HCl Emissions

In developing the 1999 Portland Cement NESHAP we concluded that no add-on air pollution controls were being used whose performance could be used as a basis for the MACT floor for existing portland cement plants. For new source MACT, we identified two kilns that were using alkaline scrubbers for the control of sulfur dioxide (SO<sub>2</sub>) emissions. But we concluded that because these devices were operated only intermittently, their performance could not be used as a basis for the MACT floor for new sources. Alkaline scrubbers were then considered for



beyond-the-floor controls. Using engineering assessments from similar technology operated on municipal waste combustors and medical waste incinerators, we estimated costs and emissions reductions. Based on the costs of control and emissions reductions that would be achieved, we determined that beyond-the-floor controls were not warranted (63 FR 14203, March 24, 1998).

We reexamined establishing a floor for control of HCl emissions from new portland cement sources. Since promulgation of the NESHAP, wet or dry scrubbers have been installed and are operating at a minimum of four portland cement plants.<sup>5</sup> Only one of the plants has conducted emissions tests for HCl using EPA Method 321 of appendix A to 40 CFR part 63. All of the test results for HCl were below the detection limits of 0.2 to 0.3 parts per million by volume (ppmv) for the measurement method.

Based on the presence of continuously operated alkaline scrubbers at portland cement plants, we believe that the performance of continuously operated alkaline scrubbers represents MACT for new sources, but we do not have sufficient test data to set an emission level. As noted above, the one source tested had HCl emission levels below the detection limit. However, we do not have data for the inlet to the source's scrubber. In some cases, HCl emissions from cement kilns with no add-on controls are below 1 ppmv, but can also be above 40 ppmv. We cannot determine if the low outlet concentration at the one tested source is solely due to the performance of the control device, or to a low inlet concentration. Therefore, we cannot state that any new cement kiln can reduce HCl emissions to levels below detection.

However, section 112(d)(3) of the CAA states that new source MACT may be based on the performance of the best controlled similar source. Alkaline scrubbers designed for control of SO<sub>2</sub> routinely achieve a 90 percent reduction in SO<sub>2</sub> emissions when applied to coal-fired boilers. Alkaline scrubbers are known to be more effective in removing HCl than SO<sub>2</sub>. Therefore, it is reasonable to assume that an alkaline scrubber can achieve a 90 percent emission reduction of HCl if the inlet loadings are comparable to those seen on coal-fired boilers. However, it is also known that the removal efficiency of a scrubber can decrease as the inlet loading decreases. For this reason, we evaluated the performance of alkaline scrubbers

applied to combustion of municipal solid waste, which has an HCl emissions loading more similar to a cement kiln than a coal-fired boiler. Based on an engineering assessment of HCl scrubbers used in municipal waste combustion applications and on vendor design information, we determined an alkaline scrubber could achieve a 15 ppmv HCl outlet concentration at low HCl inlet loadings, or at least a 90 percent HCl emissions reduction at HCl inlet loadings of 100 ppmv or greater. Therefore, we are proposing a new source MACT for HCl emissions of 15 ppmv at the control device outlet, or a 90 percent HCl emissions reduction measured across the scrubber.

Note that we are not proposing to retroactively impose this requirement on currently operating new sources. It will only apply to new sources that commence construction after December 2, 2005. Currently operating sources classified as new under the 1999 Portland Cement NESHAP would be required to meet the same requirements as existing sources.

This approach is legally permissible and reasonable. The underlying principle for having new sources meet stricter standards (in the case of new source MACT standards, standards reflecting the performance of the best controlled similar source) is that such sources are essentially starting from scratch and, therefore, can most efficiently utilize the best means of pollution control. They will not need to retrofit. Sources classified as new under the 1999 Portland Cement NESHAP are not in this position. They have already commenced construction (and most likely started operating) and so are not in the position of a source starting *de novo*. Consequently, the only new sources for purposes of the proposed amendments are those commencing construction or reconstruction after December 2, 2005. We note that the position taken here is consistent with that proposed (and recently finalized) for hazardous waste combustion sources. See 69 FR 21363, April 20, 2004.

In order to show compliance with the 15 ppmv emission limit, we are proposing to require a performance test using one of the following EPA methods:

(1) Method 26/26A of Appendix A to 40 CFR part 60. Method 26A must be used when HCl could be associated with PM (for example, the association of HCl with water droplets emitted by sources controlled by a wet scrubber); otherwise you may use Method 26.

(2) Method 320 or 321 of Appendix A to 40 CFR part 63.

(3) ASTM Method D6735-01, Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, provided that specific provisions in 40 CFR 63.1349, paragraphs (b)(5)(iii)(A) through (F) are followed. These test methods are consistent with the HCl test methods used in similar standards. To determine compliance with the percent reduction requirement we are proposing to require the source to test at the scrubber inlet and outlet using one of the above methods and calculate a percent reduction based on the concentration difference (corrected to 7 percent oxygen) divided by the inlet concentration and multiplied by 100.

We also reexamined the MACT floor for existing sources. We first considered setting the floor based on the performance of an alkaline scrubber. However, because only four facilities currently have operating alkaline scrubbers, the performance of alkaline scrubbers would not be indicative of the median of the top 12 percent of the source category. Therefore, we examined other alternatives that might constitute a floor. Because HCl emissions originate from chlorine in feed and fuel materials, we considered the use of feed/fuel selection as a potential option to reduce the amount of chlorine entering the kiln. Under this option, low-chlorine fuel and/or feed materials would be used to lower HCl emissions from kilns. However, this option presents the same problems previously discussed for using low-mercury containing feed and fuels. We have no data indicating the widespread availability of low-chlorine deposits of feed, or whether such deposits even exist. As with other contaminants, concentrations are variable between deposits as well as within deposits. The result is that uniformly low-chlorine feed is not available on a widespread basis. Furthermore, there is no information that a low-chlorine deposit of feed materials is likely also to be low in mercury, other metal HAP, or organic HAP material. Such limitations and uncertainties make this an unrealistic option. We also considered the option of changing to a low-chlorine fuel, such as natural gas. This option was also determined to be infeasible due to limits on gas availability as previously discussed in the mercury MACT determination<sup>6</sup>

<sup>6</sup> As explained above, standards reflecting these control practices (which we do not believe are feasible) would be beyond-the-floor standards because they would force changes in practice by all sources in the category, even the lowest emitters in the performance tests.

<sup>5</sup> None of these four kilns burn hazardous waste.



Another control technique we considered was a work practice control based on the use of the kiln and PM control. Because the kiln and PM control system contain large amounts of alkaline CKD, the kilns themselves remove a significant amount of HCl (which reacts with the CKD and is captured as particulate). See 69 FR 21259, April 20, 2004. We considered setting an emission limit based on reported kiln HCl emissions which reflects this natural scrubbing. However, this approach has some of the limitations previously discussed regarding establishing a floor for mercury. The HCl emissions at any one time are a function of the chlorine content of the feed materials and fuel. We could not state that the levels of HCl emissions from any one kiln could be duplicated by other kilns, or by the tested kiln on a continuous basis. We also have no data that would allow us to establish a typical percent reduction in HCl emissions resulting from the alkaline environment in the kiln.

There are total HCl emissions reductions data for cement kilns that fire hazardous waste (a separate class of cement kiln, as noted earlier). These data indicate that 80 percent of the kilns achieve at least a 95 percent reduction in total chlorine emissions at the kiln outlet compared to the total chlorine in the feed material (69 FR 21259, April 20, 2004). However, the hazardous waste being burned in the kiln has a significant amount of chlorine compared to the fuel and feed materials of a cement kiln that does not burn hazardous waste. As previously noted, the overall percent reduction of HCl goes down as the total amount of HCl present is reduced. Therefore, the percent reduction seen in kilns that burn hazardous waste is not applicable to kilns that do not fire hazardous waste.

It is nonetheless clear that all cement kilns will reduce emissions of HCl due to the kilns' alkaline operating conditions. We cannot measure the extent of emission reduction over time due to the types of variability just discussed. Because we cannot set a numeric emission limit and consequently cannot prescribe or enforce an emission standard within the meaning of section 112(h) of the CAA, we are proposing a floor for existing facilities as the work practice of operating the cement kiln under normal operating conditions and operating a particulate control device to capture HCl present in or adsorbed on the kiln particulate and have added this language in 40 CFR 63.1344.

We are proposing to allow existing sources and new sources commencing construction before the publication date of the proposed amendments 1 year after publication of the final amendments to be in compliance with the amendment as proposed. The CAA requires compliance with MACT standards "as expeditiously as practicable," and in virtually no case longer than 3 years after promulgation of the standard (CAA section 112(i)(3)(A)). Because the proposed amendment does not require the installation of a control device, we do not believe a 3-year compliance date is the most expeditious compliance date. We considered proposing a compliance date as the date the rule amendment is promulgated as proposed. However, as discussed below, we are proposing a compliance date of 1 year after publication of the final amendments for the amended THC/carbon monoxide (CO) requirements. We believe it is more reasonable to have one compliance date for all the proposed rule amendments. We do not believe this decision will measurably change the environmental benefits of the HCl standard.

We also evaluated requiring the use of an alkaline scrubber as a beyond-the-floor control option for existing sources. Based on the estimated performance, annual HCl emissions reductions estimates range from 12 tpy of HCl and 27 tpy of SO<sub>2</sub>, to 200 tpy of HCl and 600 tpy of SO<sub>2</sub>, per kiln. The total capital cost of installing an alkaline scrubber on an existing kiln is estimated to range from \$1.1 to \$5.1 million per kiln. The total annual cost is estimated to range from \$336,000 to \$1.7 million per kiln (Docket No. A-92-53). The cost per ton of HCl removed ranges from \$8,500 to \$28,000. In addition, the beyond-the-floor option would result in per-kiln nonair environmental impacts of 5,000 to 84,100 tons of scrubber slurry for disposal, 4.7 to 107 million gallons of additional water usage, and increased electricity use of 219,300 to 2.4 million kWhr. We do not consider these costs and nonair environmental impacts reasonable for the emissions reductions achieved.

We are proposing a format of volume per volume concentration for the emission limit. The specific units of the emission limit are ppmv (corrected to 7 percent oxygen) or a percent reduction. These formats have historically been used by EPA for many air emission standards and are consistent with the format of the NESHAP for cement kilns that burn hazardous waste. The concentration is corrected to 7 percent oxygen to put concentrations measured in stacks with different oxygen

concentrations on a common basis, and because the typical range of oxygen concentrations in cement kiln stack gas is from 5 to 10 percent oxygen, we consider 7 percent representative. The HCl concentration or percent reduction will be measured during an initial performance test and at least every 5 years thereafter. During this test, you will establish scrubber operating parameters, including pH and liquid-to-gas ratio, and continuously monitor these parameters.

The EPA also solicits comment on adopting alternative risk-based emission standards for HCl pursuant to section 112(d)(4) of the CAA. Both existing and new portland cement sources could be eligible for such standards. The EPA is considering two possible approaches for establishing such standards. Alternative risk-based standards would be based on national exposure standards determined by EPA to ensure protection of public health with an ample margin of safety and that do not pose adverse environmental impacts.

Under the first approach, dispersion modeling of representative worst-case sources (or, preferably, all sources) within the portland cement category would be conducted to establish a level for comparison with the risk-based national standards. This would be done by determining that the annual HCl emissions rate for a cement kiln's emissions do not result in chronic human exposures which might exceed a Hazard Quotient (HQ) of 1.0.<sup>7</sup>

Also under this approach, the same risk-based national standards would be established for each source category. The EPA has proposed a substantially similar approach for HCl and total chlorine emissions from hazardous waste-burning cement kilns (see proposed CAA section 112(d) standards at 69 FR 21305, April 20, 2004), and adopted similar approaches (again for HCl) in CAA section 112(d) rules for lime kilns (69 FR 394, January 5, 2004) and pulp and paper facilities (66 FR 3180, January 12, 2001).

In determining the appropriate risk-based standard on a national basis, EPA

<sup>7</sup> 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 a receptor's potential exposure (or modeled concentration) to the health reference value or threshold level (e.g., Reference Concentration) for an individual pollutant. The HQ values less than 1.0 indicate that exposures are below the health reference value or threshold level and, therefore, such exposures are without appreciable risk of effects in the exposed population. HQ values above 1.0 do not necessarily imply that adverse effects will occur, but that the likelihood of such effects in a given population increases as HQ values exceed 1.0. See <http://www.epa.gov/ttn/atw/nata/gloss1.html>.

would use the reference concentration (RfC) for HCl that is currently published in EPA's Integrated Risk Information System as the denominator in the calculation of HQ mentioned in the previous paragraph. The RfC is defined as an estimate of a continuous inhalation exposure for a given duration to the human population (including susceptible subgroups) that is likely to be without an appreciable risk of adverse health effects over a lifetime. As such, HQ values at or below 1.0 should be considered to provide public health protection with an ample margin of safety and, thus, can be used to develop the national risk-based emission standards. Due to data limitations regarding the universe of cement kiln sources nationwide, EPA is not currently able to conduct a national analysis to determine if all cement kilns are emitting HCl at a rate that would meet the risk-based standards. However, EPA is prepared to evaluate documentation submitted in public comment.

Under the second approach, the risk-based standards would be developed on a source-by-source basis, with sources choosing whether to seek an alternative risk-based limit. The risk-based standards would consist of a nationally applicable, uniform algorithm—again using the national exposure level for HCl just discussed. We would use this algorithm to establish site-specific emission limitations based on site-specific input from each source choosing to use this approach. Such risk-based standards would provide a uniform level of risk reduction. The EPA proposed this approach for hazardous waste combustion sources (69 FR 21297, April 20, 2004) and adopted it for industrial boilers (69 FR 55218, September 13, 2004).

Sources would then calculate an HCl emission rate either by applying values from a look-up table provided by EPA, applicable to sources located in either flat or simple elevated terrain,<sup>8</sup> or, if the source is located in a different type of terrain, conduct a site-specific

<sup>8</sup> Flat terrain is terrain that rises to a level not exceeding one half the stack height within a distance of 50 stack heights. Simple elevated terrain is terrain that rises to a level exceeding one half the stack height, but that does not exceed the stack height within a distance of 50 stack heights.

compliance demonstration. Sources using look-up tables would have to use the stack height and stack diameter from their kiln and the distance between the stack and the property boundary. At this time, due to data limitations regarding the universe of cement kiln sources nationwide, EPA cannot develop look-up tables for this source category. However, EPA is prepared to evaluate any information submitted in public comment and, if appropriate, use it as the basis for developing such look-up tables. If EPA is unable to develop look-up tables for the final rule, only site-specific risk assessments could be used as the basis for implementing this approach. For the site-specific demonstration, a source may use any scientifically accepted, peer-reviewed risk assessment methodology to calculate an annual average HCl emission rate limit. To determine that emission rate limit, the site-specific demonstration must: (1) Estimate long-term inhalation exposures through estimation of annual or multiyear average ambient concentrations; (2) estimate the inhalation exposure for the actual individual most exposed to the facility's emissions from hazardous waste combustors, considering locations where people reside and where people congregate for work, school, or recreation; (3) use site-specific, quality-assured data wherever possible; (4) use health-protective default assumptions wherever site-specific data are not available, and (5) contain adequate documentation of the data and methods used for the assessment so that it is transparent and can be reproduced by an experienced risk assessor and emissions measurement expert.

These eligibility demonstrations would then be reviewed and approved or disapproved by the permitting authority. Permitting procedures, compliance demonstration requirements, and subsequent compliance monitoring requirements would be established in a manner similar to the proposed approach for hazardous waste combustors (69 FR 21302, April 20, 2004).

### *C. Determination of MACT for THC Emissions*

During the development of the 1999 Portland Cement NESHAP, EPA

identified no add-on air pollution control technology being used in the portland cement industry whose performance could be used as a basis for establishing a MACT floor for controlling THC emissions (the surrogate for organic HAP) from existing sources. The EPA did identify two kilns using a system consisting of a precalciner (with no preheater), which essentially acts as an afterburner to combust organic material in the feed. The precalciner/no preheater system was considered a possible basis for a beyond-the-floor standard for existing kilns and as a possible basis for a MACT floor for new kilns. However, this system was found to increase fuel consumption relative to a preheater/precalciner design, to emit six times as much SO<sub>2</sub>, two and one half times as much oxides of nitrogen (NO<sub>x</sub>), and 1.2 times as much carbon dioxide (CO<sub>2</sub>) as a preheater/precalciner kiln of equivalent clinker capacity. Taking into account the adverse energy and environmental impacts, we determined that the precalciner/no preheater design did not represent MACT (63 FR 14202, March 24, 1998). We also considered feed material selection for existing sources as a MACT floor technology and concluded that this option is not available to existing kilns, or to new kilns located at existing plants because these facilities generally rely on existing raw material sources located close to the source due to the cost of transporting the required large quantities of feed materials. However, for new greenfield kilns, feed material selection as achieved through appropriate site selection and feed material blending is considered new source MACT (63 FR 14202, March 24, 1998).

We have reexamined MACT for THC for both new and existing facilities. Since the publication of the final NESHAP, we have promulgated standards for cement kilns that fire hazardous waste (40 CFR 63.1204(a)(5)) and proposed a revision to these standards (40 CFR 63.1220(a)(5)) (69 FR 21379, April 20, 2004). We are proposing to incorporate the same standards in the Portland Cement NESHAP. The proposed standards are shown in the following table:

TABLE 2.—PROPOSED THC/CO EMISSIONS LIMITS FOR CEMENT KILNS

		Proposed emission limit		
		ppmv THC <sup>3,4</sup>	Averaging period	
Existing kiln .....	w/bypass .....	No Alkali bypass <sup>6</sup> .....	20 or 100 ppmv CO <sup>1</sup> .....	Hourly.
		Main <sup>5</sup> .....	No limit .....	N/A.
		Alkali Bypass <sup>6</sup> .....	10 or 100 ppmv CO <sup>1</sup> .....	Hourly.
New kiln at an existing plant.	w/bypass .....	No Alkali Bypass <sup>6</sup> .....	20 or 100 ppmv CO <sup>1</sup> .....	Hourly.
		Main <sup>5</sup> .....	No limit .....	N/A.
		Alkali Bypass <sup>6</sup> .....	10 or 100 ppmv CO <sup>1</sup> .....	Hourly.
New kiln at greenfield facility.	w/bypass .....	No Alkali Bypass <sup>6</sup> .....	20 or (50 THC and 100 ppmv CO) <sup>2</sup> .....	20 is hourly, 50 is monthly.
		Main <sup>5</sup> .....	50 and .....	Monthly.
		Alkali Bypass <sup>6</sup> .....	10 or 100 ppmv CO <sup>1</sup> .....	Hourly.

<sup>1</sup> Sources that choose to meet the hourly CO standard, must also meet the THC standard at performance test.

<sup>2</sup> Sources that choose to meet the 50/100 standard, must also meet the 20 ppmv THC standard at performance test.

<sup>3</sup> ppmv means parts per million on a dry volume basis.

<sup>4</sup> Measured as propane and corrected to seven percent oxygen.

<sup>5</sup> Main kiln stack.

<sup>6</sup> Alternately, a facility may meet the alkali bypass standard if they use a midkiln gas sampling system that diverts a sample of kiln gas that contains levels of carbon dioxide or hydrocarbons representative of levels in the kiln.

Our rationale for applying these standards to cement kilns firing hazardous waste may be found beginning at 64 FR 52885, September 30, 1999. Essentially, the THC and CO standards guarantee that the kiln will operate under good combustion conditions and will minimize formation (and hence, emissions) of organic HAP. We believe that the control of THC emissions from cement kilns which do not fire hazardous waste should be no more difficult to control than emissions for kilns that do fire hazardous waste because good combustion practices are maintainable by either type of kiln, and the hazardous waste cement kilns would be the more challenged in that regard. Therefore, cement kilns that do not fire hazardous waste should be able to achieve the same emission limits showing good combustion conditions as kilns that fire hazardous waste. Both types of kilns use the same feedstock materials and fossil fuels, and it would be expected that lack of any hazardous waste feed for a NHW cement kiln should make it easier to control the combustion process. Because we have no data upon which to set a different standard, and because these levels are indicative of good combustion in any case, the use of the standards for cement kilns firing hazardous waste is appropriate here.

The proposed standards have different limits based on the sampling location. As noted above, the THC emission limits are based on good combustion practices. However, even with good combustion organic material in the limestone, feed material can be volatilized by the gases at the cold end of the kiln where feed is introduced, resulting in increased THC emissions.

Therefore, measuring THC in the alkali bypass or at the midpoint of the kiln using a midkiln gas sampling system should result in a more accurate assessment of kiln combustion conditions. For this reason, we are proposing different standards if an alkali bypass or midkiln gas sampling system are available, and are requiring THC and CO measurements be made in the alkali bypass or midkiln gas sampling system, if available.

We are proposing to use the term “midkiln gas sampling system” to denote the situation where the source which does not have an alkali bypass can take a sample of kiln gas that is representative of the CO or THC levels in the kiln. We are allowing a midkiln gas sampling system to be used if present on the kiln. We are not aware of any NWH cement kiln that has a midkiln gas sampling system, but we are aware of one cement kiln that burns hazardous waste that does. If a facility does not have an alkali bypass or a midkiln gas sampling system, we are not requiring that one be installed. In this case, the facility should make THC or CO measurements in the main stack. However, we also do not preclude a facility from installing a midkiln gas sampling system if desired.

The performance levels shown on the table above are for both new and existing sources (with the exception of new greenfield kilns, which have a 50 ppmv standard measured in the main stack as discussed below). We believe that good combustion conditions are indicative of the performance of the median of the best performing 12 percent of existing sources. We have no data to show that good combustion conditions in a new kiln result in any

different level of performance than good combustion conditions in an existing kiln.

The promulgated standards for cement kilns that fire hazardous waste also include a requirement that facilities electing to monitor CO in lieu of THC must also meet the THC emission level during a THC performance test. We are proposing to include this requirement in the Portland Cement NESHAP. The reason for this requirement is that there can be cases where low CO emissions may not be indicative of low THC emissions. The purpose of the THC performance test is to definitely establish that monitoring of CO for a specific facility will provide an accurate surrogate for THC, and so assure that good combustion conditions exist. We recognize for kilns with no alkali bypass or midkiln gas sampling system, there is a possibility that organic materials in the limestone feed could potentially result in high test results. However, we believe that for the short duration of a THC performance test, a facility could potentially use feed blending to minimize the contribution of the feed material. (Note that though we believe it is possible over the short term to obtain enough low organic feed material to pass a performance test, we do not believe it is possible to do so over the long term, except for greenfield kilns where the limestone feed mine can be sited with limestone organic materials content in mind.) However, the result of this requirement is that during performance tests, some facilities will be required to temporarily meet THC emission levels at the main stack that are below the new source floor for greenfield kilns of 50 ppmv. Therefore, we are specifically soliciting comment

on the necessity of retaining the requirement of a THC performance test when a facility elects to monitor CO and the achievability of the THC limits during testing, and further soliciting test data that may support other emissions levels.

We are not proposing any change to the current THC requirement for new greenfield kilns of 50 ppmv measured in the main stack, because this requirement was not challenged. We are not reconsidering this requirement. However, we are including the 50 ppmv standard in the proposed rule language to provide a complete picture of the THC standards as a convenience to the reader.

We are proposing that all of the THC/CO standards in the table above be met on a continuous basis (based on an hourly average) and be monitored using a continuous emissions monitor (CEM). For sources electing to meet a THC standard, we are proposing to retain the requirement that the monitor meet performance specification 8A contained in appendix A of 40 CFR part 60 and to add the additional quality assurance requirements contained in procedure 1 of appendix F to 40 CFR part 63. We are proposing that continuous monitors for CO must meet performance specification 4B contained in 40 CFR part 60 and adding the additional quality assurance requirements contained in procedure 1 of appendix F to 40 CFR part 63. These are the same performance specification requirements contained in the NESHAP for cement kilns that fire hazardous waste, and we consider these requirements to be appropriate for NHW kilns. If a facility elects to meet an alternative CO standard in lieu of a THC standard, we are proposing that they do not have to continuously monitor for THC, but must use EPA Method 25A in appendix A of 40 CFR part 60 to demonstrate compliance with a THC standard every 5 years during a performance test.

We are proposing to allow existing sources and new sources commencing construction before the publication date of the proposed amendments 1 year after publication of the final amendments to be in compliance with the amendments as proposed. The CAA requires compliance with MACT standards "as expeditiously as practicable," and in virtually no case longer than 3 years after promulgation of the standard (CAA section 112(i)(3)(A)). Because the proposed standards do not require the installation of a control device, we do not believe a 3-year compliance date is the most expeditious compliance date. We believe 1 year is sufficient for a source

to purchase, install, and test a monitoring system. However, we are specifically soliciting comment and supporting data on the proposed requirement.

We also considered beyond-the-floor options for existing sources of substituting raw materials with lower organic contents. However, except for new greenfield kilns, we determined this beyond-the-floor option was not feasible. As previously discussed, facilities are limited to obtaining limestone (which contains the majority of the organic material that contributes to THC emissions) from a co-located or a nearby mine. It is not possible to set a national standard based on the assumption that all affected sources will have access to limestone with low organic content. In the case of a greenfield facility, this is not the case because the mine site can be selected with the limestone organic content as a criterion. As noted at proposal of the Portland Cement NESHAP, selection of sites with low organic content limestone has been used for at least two existing sites (63 FR 14202, March 24, 1998). However, this option is limited to new kilns at greenfield facilities.

At proposal of the Portland Cement NESHAP, we considered the use of a precalciner/no preheater system as the basis for new source MACT and the basis for a beyond-the-floor option for existing sources. However, due to the adverse energy impacts and secondary air impacts, this option was determined not to represent best control for new sources or an acceptable beyond-the-floor alternative for existing sources (63 FR 14202, March 24, 1998).

For the THC emission standard, we proposed to retain the volume per volume concentration emission limit format. The specific units of the emission limit are ppmv (as propane, corrected to 7 percent oxygen). This emission limit format has historically been used by EPA for many air emission standards. This format is consistent with the format of the NESHAP for cement kilns that burn hazardous waste. The concentration is corrected to 7 percent oxygen to put concentrations measured in stacks with different oxygen concentrations on a common basis, and because the typical range of oxygen concentrations in cement kiln stack gas is from 5 to 10 percent oxygen, we consider 7 percent representative. The THC or CO concentration can be monitored directly with the CEM required by the proposed standard. The reference or calibration gas for the CEM is propane, and the THC data analyzed in the development of the proposed standard were referenced to propane.

Therefore, propane is the appropriate reference compound for concentration data.

For the 10 and 20 ppmv THC and 100 ppmv CO limits, we are proposing to demonstrate compliance using a CEM and a 1-hour averaging period. If a facility elects to continuously monitor CO, we are proposing to require that the source also meet the THC limit during a 3-hour performance test using EPA Method 25A. The reason for the THC performance test requirement is to ensure that monitoring CO will be representative of low THC emissions (and hence, good combustion conditions, as explained earlier). We are proposing to retain the 1-hour averaging period specified in the NESHAP for cement kilns that burn hazardous waste.

#### *D. Evaluation of a Beyond-the-Floor Control Option for Non-Volatile HAP Metal Emissions*

In our MACT determination for PM (the surrogate for non-volatile HAP metals), we concluded that well-designed and properly operated FF or ESP designed to meet the new source performance standards (NSPS) for portland cement plants represent the MACT floor technology for control of PM from kilns and in-line kiln/raw mills. Because no technologies were identified for existing or new kilns that would consistently achieve lower emissions than the NSPS, EPA concluded that there was no beyond-the-floor technology for PM emissions (63 FR 14199, March 24, 1998).

In *National Lime Association v. EPA*, the court held that EPA had failed to adequately document that substituting natural gas for coal was an infeasible control option, and also had not assessed nonair environmental impacts when considering beyond-the-floor standards for HAP metals (233 F. 3d at 634-35). As a result, the court remanded the beyond-the-floor determination for HAP metals for further consideration by EPA.

In our reexamination of a beyond-the-floor MACT control standard for HAP metals, we considered both fuel switching and changing to feed materials with a lower metals content. Both of these options suffer from the problems previously discussed for using low-mercury fuels/feed materials to reduce mercury emissions. These problems are that low-metals fuels and feed are not universally available (*Sierra Club v. EPA*, 353 F. 3d at 988 (substitution of alternative raw materials not feasible, so "EPA reasonably refused to set beyond-the-floor standards \* \* \* based on a requirement that smelters switch" raw materials)). In addition, we

determined that even if low-metals fuel/feeds were available, the cost of requiring sources to use them would be unreasonable, indeed prohibitive. More detailed information on this analysis may be found in the docket for the proposed amendments. Because the cost of this beyond-the-floor is prohibitive, we did not perform a detailed analysis of the nonair environmental impacts. There should be no water quality impacts for this option since no additional water is needed. Any effects on solid waste generation would be expected to be minimal because the same amount of CKD would be generated. Likewise, energy implications are minimal because the same amount of energy use would occur. Nonetheless, for reasons of the high costs relative to the potential emissions reductions, EPA is not proposing a beyond-the-floor standard based on material or fuel substitution, even if this were a feasible alternative.

#### IV. Other Issues on Which We Are Seeking Comment

On April 5, 2002, we amended the introductory text of 40 CFR 63.1353(a) to make it more clear that affected sources under the Portland Cement NESHAP were not subject to 40 CFR part 60, subpart F (67 FR 16615, April 20, 2002). In making this change, we inadvertently deleted paragraphs (a)(1) and (2) of 40 CFR 63.1353. The language in these paragraphs is still necessary for determining the applicability of 40 CFR part 60, subpart F. We are proposing to reinstate these paragraphs as originally written in the final rule.

On April 5, 2002, we also amended 40 CFR 63.1340(c) to read as follows:

For portland cement plants with on-site nonmetallic mineral processing facilities, the first affected source in the sequence of materials handling operations subject to this subpart is the raw material storage, which is just prior to the raw mill. Any equipment of the on-site nonmetallic mineral processing plant which precedes the raw material storage is not subject to this subpart. In addition, the primary and secondary crushers of the on-site nonmetallic mineral processing plant, regardless of whether they precede the raw material storage, are 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 to the raw mill.

This amendment implemented part of a settlement agreement between EPA and the Portland Cement Association (PCA), which was signed September 7, 2001. However, the PCA has since brought to our attention what they considered to be a misinterpretation of the amended rule text for a specific

facility in Pennsylvania. The facility in question has a limestone raw materials storage area followed by conveyers and other raw materials storage, all of which feed into a bin labeled "raw mill feed bin." The PCA claimed that the raw mill feed bin was the first point subject to the Portland Cement NESHAP, not the limestone raw materials storage area. We had interpreted the first point subject to the Portland Cement NESHAP as the limestone raw materials storage area. The PCA based their claim on the specific rule text "raw material storage, which is just prior to the raw mill" and the use of the term, "the first conveyor transfer point subject to this subpart," rather than the term "conveyers." They noted that the raw mill feed bin met the definition of raw material storage because it contained raw material, was "just prior" to the raw mill, and there was only one conveyor between the raw mill feed bin and the raw mill. The PCA also stated that during the negotiation, they had made it clear that this was the proper interpretation of this language.

In an effort to resolve this issue, we first reviewed the documentation leading up to the settlement agreement. In a letter dated December 27, 1999, the PCA's counsel wrote "the final rule applies to sources with on-site nonmetallic mineral processing facilities for which the secondary crusher is located in the sequence of materials handling operation at a point after the first transfer point associated with the conveyor transferring material from raw material storage to the raw mill" (docket No. A-92-53). He noted that these sources "are required to comply with the standards under NSPS, 40 CFR part 60, subpart OOO, for nonmetallic mineral processing operations." In the last version of the settlement agreement, the section concerning the revised rule language discussed above was titled "applicability of the final rule to crushers." Based on these documents, we do not see any written evidence that the rule language had any purpose other than to clarify that secondary crushers were not subject to the Portland Cement NESHAP.

In addition, we believe the PCA interpretation is not reasonable when reading the entire final NESHAP. The paragraph also states that "In addition, the primary and secondary crushers of the on-site nonmetallic mineral processing plant, regardless of whether they precede the raw material storage, are not subject to this subpart." If a facility has a crusher after raw material storage, then the raw material storage is not "just prior" to the raw mill based on the PCA interpretation of the meaning of

"just prior." In addition, there cannot be just one "conveyor," there are two—the conveyor between raw material storage and the crusher, and a conveyor between the crusher and the raw mill. Given these facts, we believe that the rule language as written is open to more than one interpretation.

In our review, we also observed that the original Portland Cement NSPS were promulgated in 1971. At that time, we established the portland cement source category to include raw materials storage. We interpret this to mean any storage that would be required by a typical cement plant, regardless of any co-located nonmetallic minerals operation. In 1985, we promulgated the Nonmetallic Minerals Operations NSPS. In order to avoid potential overlap, we specifically stated in 40 CFR 60.670 that a source subject to the Portland Cement NSPS was not subject to the Nonmetallic Minerals Operations NSPS. We further stated that once any emission point source became subject to the Portland Cement NSPS, all emission point sources that follow in the process are exempt from the Nonmetallic Minerals Operations NSPS. The CAA specifically states that, if possible, the NSPS and NESHAP source categories should be the same (section 112(c)(1)). Based on that requirement, we believe we should continue to include any raw materials emissions source that would be potentially subject to the Portland Cement NSPS as an affected source under the Portland Cement NESHAP.

As an example, if we were to accept the PCA interpretation, two storage bins at the facility in question, which have no connection with the nonmetallic minerals operation, but are obviously part of the portland cement plant, would not be covered by the Portland Cement NESHAP, only because a nonmetallic minerals operation was present at the same plant site. We do not believe that this result is sensible.

We believe it is important to continue to cover all raw materials storage and handling points under the Portland Cement NESHAP, the source category to which these raw material storage operations relate. Though these points may not be the majority of the emission inventory at a particular facility, they could, in specific situations, contribute significantly to a facility's fugitive PM emissions. We note that the actual rule requirements are mainly for EPA Method 22 of 40 CFR part 60, appendix A, reporting and recordkeeping. Facilities already have to perform daily EPA Method 22 observations on certain equipment. We believe that the further requirement to make monthly to annual observations of visible emissions from

materials handling points imposes a minor burden and contributes significantly to reducing fugitive dust problems that may occur at these types of facilities.

We are soliciting comment on the best resolution of this issue. We are considering (but are not limiting ourselves to) the following options:

(1) Changing the wording of 40 CFR 63.1340(c) to make it clear that all raw materials storage and handling is covered by the NESHAP, but that crushers (regardless of their location) are not.

(2) Including crushers as an affected source in the Portland Cement NESHAP and incorporating the current requirements applicable to crushers contained in 40 CFR part 60, subpart OOO (and correspondingly, exempting crushers covered by the Portland Cement NESHAP from 40 CFR part 60, subpart OOO).

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

### A. What Facilities Are Affected by the Proposed Amendments?

We estimate that there are approximately 118 cement plants currently in operation. These 118 plants have a total of 210 cement kilns. We estimate that five new kilns will be subject to the proposed amendments by the end of the 5th year after promulgation of the amendments. We assumed that all new kilns would be at brownfield sites, because this assumption avoids an underestimation of costs for THC monitoring.

### B. What Are the Air Quality Impacts?

The variation in hydrocarbon emissions from kilns makes it difficult to quantify impacts on a national basis with any accuracy. Reported hydrocarbon emission test results range from less than 1 ppmv dry basis (at 7 percent oxygen) to over 140 ppmv dry basis (Docket A-92-53) measured at the main kiln

For 52 kilns tested for hydrocarbon emissions (Docket A-92-53), approximately 25 percent had emissions of hydrocarbons that exceeded the proposed 20 ppmv THC limit at the main stack. The average hydrocarbon emissions for the kilns exceeding 20 ppmv was 62.5 ppmv. Based on a model kiln producing 650,000 tpy of clinker, emissions reductions as a result of the standard would vary depending on the combustion practices in use. Kilns operating at or just above the 20 ppmv main stack limit would experience little or no emissions reductions as a result of the proposed emissions limits. For an

existing kiln exceeding the proposed 20 ppmv emissions limit and currently emitting near the average hydrocarbon level of 62.5 ppmv, the improvement in combustion practices would result in a reduction of about 141 tpy for a 650,000 tpy kiln. A kiln with poor combustion practices and emitting at the highest reported hydrocarbon level of 142 ppmv would experience emissions reductions of over 403 tpy.

The proposed HCl emissions limits are based on current operation practices, and we are not able to quantify emissions reductions for existing sources. For new sources for which we are proposing a quantified standard, we estimate the emissions reductions for a typical new kiln to be 107 tpy per kiln. Based on five new kilns becoming subject to the final NESHAP, the emissions reductions will be 535 tpy of HCl in 5 years.

The proposed HCl standards for new sources will also result in concurrent control of SO<sub>2</sub> emissions. The SO<sub>2</sub> emissions reductions for a typical new kiln will be 322 tpy. The emissions reductions 5 years after promulgation of the final standards will be 1,610 tpy. Note that we have determined that reducing SO<sub>2</sub> emissions also results in a reduction in fine particle emissions because some SO<sub>2</sub> is converted to sulfates in the atmosphere. Therefore, the proposed HCl standards will also result in a reduction in emissions of fine PM.

In addition to the direct air emissions impacts, there will be secondary air impacts that result in the increased electrical demand generated by new sources' control equipment. These emissions will be an increase in emissions of pollutants from utility boilers that supply electricity to the portland cement facilities. We estimate these increases to be 11 tpy of NO<sub>x</sub>, 6 tpy of CO, 19 tpy of SO<sub>2</sub>, and 0.55 tpy of PM at the end of the 5th year after promulgation.

### C. What Are the Water Quality Impacts?

There should be no water quality impacts for the proposed amendments. The requirement for new sources to use alkaline scrubbers to control HCl will produce a scrubber slurry liquid waste stream. However, we are assuming the scrubber slurry produced will be dewatered and disposed of as solid waste. Water from the dewatering process will be recycled back to the scrubber.

### D. What Are the Solid Waste Impacts?

The only solid waste impact will be the generation of scrubber slurry that is assumed to be dewatered and disposed

of as solid waste. The amount of solid waste produced is estimated as 228,000 tpy in the 5th year after promulgation of the amendments.

### E. What Are the Energy Impacts?

Requiring new kilns to install and operate alkaline scrubbers will result in increased energy use due to the electrical requirements for the scrubber and increased fan pressure drops. We estimate the additional electrical demand to be 4.9 million kWhr per year by the end of the 5th year.

### F. What Are the Cost Impacts?

The proposed rule amendments would require all existing sources (area and major) to install and operate monitors (if not already present) and perform performance tests. In our cost analysis, we assumed that all existing facilities would elect to meet the alternative CO emission limits. Therefore, the impacts include the costs to install and operate a CO monitor and the cost for a performance test to measure THC every 5 years. We estimated a range of annualized capital costs based on 3 percent and 7 percent social discount factors.

The total capital cost for existing sources is estimated to be \$159,545 per kiln (2003 dollars), and \$33.5 million nationally, based on 210 operating kilns. The total annualized cost per kiln is estimated to range from \$37,500 to \$41,700 depending on the discount factor. Total national annualized costs are estimated to range from \$7.9 million to \$8.8 million.

The cost estimates above assume all kilns will have to install a CO monitor. This assumption may significantly overestimate the costs because CO monitors may already be installed at some existing kilns, either as a requirement under a State permit or as a means of optimizing combustion control. In addition, the estimates above do not take into account any reduced fuel costs resulting from improved combustion management.

The costs for new sources include the CO monitor, an alkaline wet scrubber, and THC and performance tests. The total capital cost per kiln is estimated to be \$2.3 million. The cumulative capital cost in the fifth year is estimated to be \$11.5 million. The estimated total annualized cost per new kiln will range from \$741,300 to \$800,800. National annualized costs will range from \$3.7 million to \$4.0 million.

### G. What Are the Economic Impacts?

The EPA conducted an economic analysis of the proposed amendments to the NESHAP which have cost

implications. These are the requirements to test for THC and monitor for THC or CO for new and existing kilns or in-line raw mill/kilns, and the cost to install and operate a wet scrubbing system for new kilns or in-line raw mill/kilns. The EPA assessed earlier portland cement regulations with greater per source costs, and those costs did not have a significant effect on the cost of goods produced. Since the conditions that produced those conclusions still exist today, EPA asserts these new regulations will not have a discernible impact on the portland cement market.

We note that the highest cost per kiln resulting from the proposed amendments will be the cost of alkaline scrubbers for new kilns. This additional requirement represents less than 1.5 percent of the expected revenue stream for a typical new kiln. We do not consider this to be economically significant.

**VI. Statutory and Executive Order Reviews**

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

Under Executive Order 12866 (58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is “significant” and, therefore, subject to Office of Management and Budget (OMB) review 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 obligations 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.

It has been determined that the proposed amendments are not a “significant regulatory action” under the terms of Executive Order 12866 and is, therefore, not subject to OMB review.

*B. Paperwork Reduction Act*

The information collection requirements in the existing rule were submitted to and approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.*, and assigned OMB control No. 2060–0416. An Information Collection Request (ICR) document was prepared by EPA (ICR No. 1801.02) and a copy may be obtained from Susan Auby by mail at Office of Environmental Information, Collection Strategies Division (2822T), U.S. EPA, 1200 Pennsylvania Avenue, NW., Washington DC 20460, by e-mail at

*auby.susan@epa.gov*, or by calling (202) 566–1672. A copy may also be downloaded from the Internet at *http://www.epa.gov/icr*.

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR number 1801.05.

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.

These requirements include installation of a continuous monitor at all existing sources and a performance test to measure THC, and the requirement for new sources to a performance test to measure HC. We expect these additional requirements to affect 118 facilities over the first 3 years. The estimated annual average burden is outlined below.

Affected entity	Total hours	Labor costs	Total annual O&M costs	Total costs
Industry .....	15,413	\$983,325	\$791,800	\$2,500,000
Implementing Agency .....	502	30,037	NA	48,037

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

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

To comment on the Agency’s need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for the proposed amendments, which includes this ICR, under Docket ID No. OAR–2002–0051. Submit any comments related to the ICR for the proposed amendments to EPA and OMB. See **ADDRESSES** section at the beginning of

this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after December 2, 2005, a comment to OMB is best assured of having its full effect if OMB receives it by January 3, 2006. The final rule will respond to any OMB or public comments on the information collection requirements contained in the proposed amendments.

*C. Regulatory Flexibility Act*

The Regulatory Flexibility Act (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 impact of today's proposed rule amendments on small entities, small entity is defined as: (1) A small business that has fewer than 750 employees; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's proposed rule amendments on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The small entities directly regulated by the proposed rule amendments are small businesses. We determined there are six or seven small businesses in this industry out of a total of 44. Each small business operates a single plant with one or more kilns. The total annualized cost per kiln is estimated to range from \$37,500 to \$41,700 depending on the discount factor. The revenue for the entire small business sector is estimated to be around \$260 million (2003 dollars). The compliance cost is estimated to be less than 0.3 percent of small business revenue. For new sources, which will incur higher costs because new kilns must install alkaline scrubbers for control of HC1 emissions, the cost of control is estimated to be less than 1.5 percent of the expected revenue from a new kiln. We currently do not have any information on plans for small businesses to build new kilns.

Although the proposed rule amendments will not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of the proposed amendments on small entities. The proposed emission standards are representative of the floor level of emissions control, which is the minimum level of control allowed under the CAA. Further, the costs of required performance testing and monitoring have been minimized by specifying emissions limits and monitoring parameters in terms of surrogates for HAP emissions, which are

less costly to measure. The EPA is also allowing affected firms up to 1 year from the effective date of the final rule amendments to comply, which could lessen capital availability concerns.

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

#### *D. Unfunded Mandates Reform Act*

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any 1 year. Before promulgating a rule for which a written statement is needed, section 205 of the UMRA generally requires EPA 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 EPA 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 EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that the proposed rule amendments do not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any 1 year, nor do the amendments significantly or uniquely

impact small governments, because they contain no requirements that apply to such governments or impose obligations upon them. Thus, today's proposed rule amendments are not subject to the requirements of sections 202 and 205 of the UMRA.

#### *E. Executive Order 13132, Federalism*

Executive Order 13132 (64 FR 43255, August 10, 1999), requires EPA 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."

The proposed rule amendments do not have federalism implications. The proposed rule amendments 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, because State and local governments do not own or operate any sources that would be subject to the proposed rule amendments. Thus, Executive Order 13132 does not apply to the proposed rule amendments.

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 amendments from State and local officials.

#### *F. 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." The proposed rule amendments do not have tribal implications, as specified in Executive Order 13175, because tribal governments do not own or operate any sources subject to today's action. Thus, Executive Order 13175 does not apply to the proposed rule amendments.

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

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must 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 the Agency.

The EPA interprets 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 rule. The proposed rule amendments are not subject to Executive Order 13045 because they are based on technology performance and not on health or safety risks.

*H. Executive Order 13211: Actions That Significantly Affect Energy, Supply, Distribution, or Use*

The proposed rule amendments are not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because they are not a significant regulatory action under Executive Order 12866.

*I. 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, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The VCS are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by VCS bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable VCS.

The proposed rule amendments involve technical standards. The EPA proposes to cite Method 25A of 40 CFR part 60, appendix A; Performance Specification (PS) 4B of 40 CFR part 60, appendix B; and ASTM Method D6735-01 (as an alternative to EPA Methods 26/26A, 320, and 321).

Consistent with the NTTAA, EPA conducted searches to identify VCS in

addition to these EPA methods. No applicable VCS were identified for PS 4B and ASTM Method D6735-01.

The standard ASTM D6735-01, "Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method," is cited as an acceptable alternative to EPA Method 320 to measure hydrogen chloride emissions from mineral calcining exhaust sources for the purposes of the final NESHAP, provided that the additional requirements described in paragraphs (b)(5)(iii)(A) through (F) of 40 CFR 63.1349 are followed. Also, ASTM D6735-01 is itself a VCS.

In addition to the VCS EPA cites in the proposed rule amendments, the search for emissions measurement procedures identified two additional VCS. The EPA determined that both of the standards identified for measuring air emissions or surrogates subject to emissions standards in the proposed amendments were impractical alternatives to EPA test methods. Therefore, EPA does not intend to adopt these standards for this purpose. The reasons for this determination for the two methods can be found in Docket ID No. OAR-2002-0051.

Section 63.1349 of 40 CFR part 63 lists the EPA testing methods included in the proposed rule amendments. Under 40 CFR 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.

The EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable VCS and to explain why such standards should be used in the proposed rule amendments.

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

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

Dated: November 21, 2005.

**Stephen L. Johnson,**  
*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 LLL—[AMENDED]**

1. Section 63.1341 is amended by adding the following definition in alphabetical order to read as follows:

**§ 63.1341 Definitions.**

\* \* \* \* \*

*Midkiln gas sampling system* means a device which the Administrator determines on a case-by-case basis diverts a sample of kiln gas that contains levels of carbon monoxide (CO) or hydrocarbons representative of the levels in the kiln.

\* \* \* \* \*

2. Section 63.1342 is revised to read as follows:

**§ 63.1342 Standards: General.**

Table 1 to this subpart provides cross references to the 40 CFR part 63, subpart A, general provisions, indicating the applicability of the general provisions requirements to subpart LLL.

3. Section 63.1343 is amended by:

- a. Revising paragraph (a);
- b. Adding paragraphs (b)(4) through (b)(6);
- c. Revising paragraph (c)(4);
- d. Adding paragraphs (c)(5) and (c)(6);
- e. Revising paragraphs (e) introductory text and (e)(2); and
- f. Adding paragraph (e)(3) and (f) to read as follows:

**§ 63.1343 Standards for kilns and in-line kiln/raw mills.**

(a) *General.* The provisions in this section apply to each kiln, each in-line kiln/raw mill, and any alkali bypass associated with that kiln or in-line kiln/raw mill. All gaseous and D/F emission limits are on a dry basis, corrected to 7 percent oxygen. All total hydrocarbon (THC) emission limits are measured as propane. The block averaging periods to demonstrate compliance are hourly for 100 parts per million by volume (ppmv) CO limit and both the 10 and 20 ppmv total hydrocarbon (THC) limits, and monthly for 50 ppmv THC limits.

(b) \* \* \*

(4)(i) Contain more than 20 ppmv THC from the main stack if the source has no alkali bypass or midkiln gas sampling system; or

(ii) Contain more than 100 ppmv CO in the main stack if the source has no alkali bypass or midkiln gas sampling system. However, the source must demonstrate during the performance test that the main stack gas contains no more than 20 ppmv THC.

(5)(i) Contain more than 10 ppmv THC in the alkali bypass or midkiln gas sampling system; or

(ii) Contain more than 100 ppmv CO in the alkali bypass or midkiln gas sampling system. However, the source must demonstrate during the performance test that the alkali bypass or midkiln gas sampling system gas contains no more than 10 ppmv THC.

(6) Contain more than 15 ppmv hydrogen chloride (HCl) if the source is a new or reconstructed source that commenced construction after December 2, 2005, unless the source demonstrates a 90 percent reduction in HCl emissions measured across an add-on control device, such as an alkaline scrubber. New sources that commenced construction prior to December 2, 2005, must meet the operating limits specified in § 63.1344(f).

\* \* \* \* \*

(c) \* \* \*

(4)(i) Contain more than 20 ppmv THC in the main stack if there is no alkali bypass or midkiln gas sampling system; or

(ii) Contain more than 50 ppmv THC and 100 ppmv CO in the main stack gas if there is no alkali bypass or midkiln gas sampling system. However, the source must demonstrate during the performance test that the main stack gas contains no more than 20 ppmv THC.

(5)(i) Contain more than 50 ppmv THC in the main stack and 10 ppmv THC in the alkali bypass or midkiln gas sampling system, or

(ii) Contain more than 50 ppmv THC in the main stack and 100 ppmv CO in the alkali bypass or midkiln gas sampling system. However, the source must demonstrate during the performance test that the alkali bypass or midkiln gas sampling system contains no more than 10 ppmv THC.

(6) Contain more than 15 ppmv HCl if the source is a new source that commenced construction after December 2, 2005, unless the source demonstrates a 90 percent reduction in HCl emissions measured across an add-on control device, such as an alkaline scrubber. New sources that commenced construction prior to December 2, 2005 must meet the operating limits specified in § 63.1344(f).

\* \* \* \* \*

(e) *Greenfield/area sources.* No owner or operator of a greenfield kiln or a greenfield in-line kiln/raw mill at a facility that is an area source subject to the provisions of this subpart shall cause to be discharged into the atmosphere from these affected sources any gases which:

\* \* \* \* \*

(2)(i) Contain more than 20 ppmv THC in the main stack if there is no alkali bypass or midkiln gas sampling system; or

(ii) Contain more than 50 ppmv THC and a 100 ppmv CO in the main stack. However, the source must demonstrate at performance test that the main stack gas contains no more than 20 ppmv THC.

(3)(i) Contain more than 50 ppmv THC in the main stack and 10 ppmv THC from the alkali bypass or midkiln gas sampling system; or

(ii) Contain 50 ppmv THC in the main stack and 100 ppmv CO in the alkali bypass or midkiln gas sampling system. However, the source must demonstrate at its performance test that the alkali bypass or midkiln gas sampling system contains no more than 10 ppmv THC limit.

(f) *Existing, reconstructed, or new brownfield/area sources.* No owner or operator of an existing, reconstructed, or new brownfield kiln or an existing, reconstructed, or new brownfield in-line kiln/raw mill at a facility that is an area source subject to the provisions of this subpart shall cause to be discharged into the atmosphere any gases which:

(1)(i) Contain more than 20 ppmv THC in the main stack if the source has no alkali bypass or midkiln gas sampling system; or

(ii) Contain more than 100 ppmv CO if the source has no alkali bypass or midkiln gas sampling system. However, the source must demonstrate at performance test that the gas in the main stack contains no more than 20 ppmv THC.

(2)(i) Contain more than 10 ppmv THC in the alkali bypass or midkiln gas sampling system; or

(ii) Contain 100 ppmv CO in the alkali bypass or midkiln gas sampling system. However, the source must demonstrate at performance test that the gas in the alkali bypass or midkiln gas sampling system contains no more than 10 ppmv THC.

4. Section 63.1344 is amended by adding paragraph (f) to read as follows:

**§ 63.1344 Operating limits for kilns and in-line kiln/raw mills.**

\* \* \* \* \*

(f) Existing kilns and in-line kilns/raw mills must continuously operate the cement kiln under normal operating conditions and operate a particulate control device to capture HCl present in or adsorbed on the kiln particulate, including particulate in the alkali bypass (if present).

5. Section 63.1349 is amended by:

a. Revising paragraph (b) introductory text;

b. Revising paragraph (b)(4);  
c. Adding paragraphs (b)(5) and (b)(6);  
d. Revising paragraph (c); and  
e. Removing paragraph (f) to read as follows:

**§ 63.1349 Performance testing requirements.**

\* \* \* \* \*

(b) Performance tests to demonstrate initial compliance with this subpart shall be conducted as specified in paragraphs (b)(1) through (6) of this section.

\* \* \* \* \*

(4) The owner or operator of an affected source subject to limitations on emissions of THC shall demonstrate initial compliance with the THC limit as follows:

(i) If the owner or operator elects not to meet the alternative CO emission limit of 100 ppmv, they must demonstrate compliance with the appropriate THC emissions limit by operating a continuous emission monitor in accordance with Performance Specification 8A of appendix B to part 60 of this chapter and meet the quality assurance procedures specified in procedure 1 of appendix F to this part.

(ii) If the source elects to comply with a THC emission limit by meeting the alternative CO emissions limit, they must demonstrate compliance by operating a continuous emission monitor in accordance with Performance Specification 4B of appendix B to part 60 of this chapter and meet the quality assurance procedures specified in procedure 1 of appendix F to this part. They must also demonstrate compliance with the appropriate THC emissions limit during the performance test using EPA Method 25A of appendix A to part 60 of this chapter. They must calibrate with propane and report the THC results as propane.

(iii) The duration of the performance test(s) shall be 3 hours, and the average THC/CO concentration during the 3-hour performance test shall be calculated. The owner or operator of an in-line kiln/raw mill shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating.

(5) To determine compliance with an emission limit for HCl you must use one of the following test methods:

(i) Method 26/26A of appendix A to part 60 of this chapter. Method 26A must be used when HCl could be associated with PM (for example, the

association of HCl with water droplets emitted by sources controlled by a wet scrubber); otherwise you may use Method 26.

(ii) Method 320 or 321 of appendix A to part 63 of this chapter.

(iii) ASTM Method D6735-01, Standard Test Method for Measurement

of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, provided that the provisions in paragraphs (b)(5)(iii)(A) through (F) of this section are followed.

(A) 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.

(B) 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:

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

Where:

RSD<sub>a</sub> = The test run relative standard deviation of sample pair a, percent.  
 C1<sub>a</sub> and C2<sub>a</sub> = The HCl concentrations, milligram/dry standard cubic meter(mg/dscm), from the paired samples.

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

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

Where:

RSD<sub>TA</sub> = The test average relative standard deviation, percent.  
 RSD<sub>a</sub> = The test run relative standard deviation for sample pair a.  
 p = The number of test runs, ≥3.

(D) If RSD<sub>TA</sub> is greater than 20 percent, the data are invalid and the test must be repeated.

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

(F) 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.

(6) To determine compliance with the 90 percent reduction for HCl, you must measure the HCl concentration at the inlet and outlet of the alkaline scrubber using one of the test methods specified in paragraph (b)(4) of this section. The concentrations should be determined on a dry basis, corrected to 7 percent oxygen. The percent reduction is then calculated as the difference between the inlet and outlet concentration divided by the inlet concentration times 100.

(c) Except as provided in paragraph (e) of this section, performance tests required under paragraphs (b)(1) through (b)(2) and (b)(4) through (b)(5) of this section shall be repeated every 5

years, except the owner or operator of a kiln, in-line kiln/raw mill, or clinker cooler is not required to repeat the initial performance test of opacity for the kiln, in-line kiln/raw mill, or clinker cooler.

\* \* \* \* \*

6. Section 63.1350 is amended by:

a. Revising paragraphs (h) and (n); and

b. Adding paragraph (o) to read as follows:

**§ 63.1350 Monitoring requirements.**

\* \* \* \* \*

(h) The owner or operator of an affected source subject to a limitation on THC emissions under this subpart shall comply with the monitoring requirements of paragraphs (h)(1) through (3) of this section to demonstrate continuous compliance with the THC emission standard:

(1) An owner or operator shall install, calibrate, maintain, and operate a continuous THC emissions monitor meeting the requirements of Performance Specification 8A of appendix B to part 60 of this chapter and meet the quality assurance procedures specified in procedure 1 of appendix F to this part. If the owner or operator elects to meet an alternative CO emission limit, then they must install, calibrate, maintain, and operate a continuous CO emissions monitor meeting the requirements of Performance Specification 4B of appendix B to part 60 of this chapter and meet the quality assurance procedures specified in procedure 1 of appendix F to this part.

(2) The owner or operator of a greenfield raw material dryer, the main exhaust of a greenfield kiln, or the main exhaust of a greenfield in-line kiln/raw mill, that elects to meet the alternative Co emissions limit is not required to calculate hourly rolling averages in accordance with section 4.9 of Performance Specification 8A.

(3) Any CO or THC emissions that exceed the emission limits in § 63.1343

using the averaging periods specified in § 63.1343 is a violation of the standard.

\* \* \* \* \*

(n) An owner or operator of an affected source subject to HCl emissions must comply by establishing and complying with the following operating parameter limits for a wet scrubber.

(1) If your source is equipped with a high energy wet scrubber such as a venturi, hydrosonic, collision, or free jet wet scrubber, you must establish a limit on minimum pressure drop across the wet scrubber on an hourly rolling average as the average of the test run averages.

(2) If your source is equipped with a low energy wet scrubber such as a spray tower, packed bed, or tray tower, you must establish a minimum pressure drop across the wet scrubber based on manufacturer's specifications. You must comply with the limit on an hourly rolling average.

(3) If your source is equipped with a low energy wet scrubber, you must establish a limit on minimum liquid feed pressure to the wet scrubber based on manufacturer's specifications. You must comply with the limit on an hourly rolling average.

(4) You must establish a limit on minimum pH on an hourly rolling average as the average of the test run averages.

(5) You must establish limits on either the minimum liquid to gas ratio or both the minimum scrubber water flowrate and maximum flue gas flowrate on an hourly rolling average as the average of the test run averages.

(o) An owner or operator of an affected source subject to an HCl emissions limit and using a dry scrubber must comply by establishing and meeting all of the following operating parameter limits specified in paragraphs (o)(1) through (o)(3) of this section.

(1) Minimum sorbent feedrate. You must establish a limit on minimum sorbent feedrate on an hourly rolling average as the average of the test run averages.

(2) Minimum carrier fluid flowrate or nozzle pressure drop. You must establish a limit on minimum carrier fluid (gas or liquid) flowrate or nozzle pressure drop based on manufacturer's specifications.

(3) Sorbent specifications. (i) You must specify and use the brand (*i.e.*, manufacturer) and type of sorbent used during the comprehensive performance test until a subsequent comprehensive performance test is conducted, unless you document in the site-specific performance test plan required under § 63.1207(e) and (f) key parameters that affect adsorption and establish limits on those parameters based on the sorbent used in the performance test.

(ii) You may substitute at any time a different brand or type of sorbent provided that the replacement has equivalent or improved properties compared to the sorbent used in the performance test and conforms to the

key sorbent parameters you identify under paragraph (o)(3) of this section. You must record in the operating record documentation that the substitute sorbent will provide the same level of control as the original sorbent.

7. Section 63.1351 is amended by adding paragraphs (c) and (d) to read as follows:

**§ 63.1351 Compliance dates.**

\* \* \* \* \*

(c) The compliance date for an affected source that commenced construction on or before December 2, 2005, subject to the revised THC and HCl emissions limits proposed on December 2, 2005, will be 1 year after publication of the final amendments.

(d) The compliance date for an affected source that commenced construction after December 2, 2005, subject to the revised THC and HCl emissions limits proposed on December 2, 2005, will be startup or the effective

date of the final amendments, whichever is later.

8. Section 63.1356 is amended by adding paragraphs (a)(1) and (2) to read as follows:

**§ 63.1356 Exemption from new source performance standards.**

(a) \* \* \*

(1) Kilns and in-line kiln/raw mills, as applicable, under 40 CFR 60.60(b), located at area sources are subject to PM and opacity limits and associated reporting and recordkeeping, under 40 CFR part 60, subpart F.

(2) Greenfield raw material dryers, as applicable under 40 CFR 60.60(b), located at area sources, are subject to opacity limits and associated reporting and recordkeeping under 40 CFR part 60, subpart F.

\* \* \* \* \*

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