ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[IL–64–2–5807; FRL–5997–7]

RIN 2060–AE41

National Emission Standards for Hazardous Air Pollutants for Source Categories: National Emission Standards for Primary Copper Smelters

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule and notice of public hearing.

SUMMARY: This action proposes national emission standards for hazardous air pollutants (NESHAP) for new and existing primary copper smelters under section 112 of the Clean Air Act (Act), as amended in November 1990. Primary copper smelters can potentially emit significant amounts of certain toxic metals that have been identified in the Act as hazardous air pollutants (HAP). Overall, the HAP emitted in the largest quantities from primary copper smelters are arsenic compounds and lead compounds. Chronic exposure to arsenic is associated with human cancers of the skin, bladder, liver and lungs and can cause other developmental and reproductive effects. Exposure to lead compounds results in adverse effects on the blood, central nervous system, and kidneys. The proposed NESHAP would require use of air emission controls to reduce HAP emissions from primary copper smelters that produce anode copper using flash smelting furnaces integrated with batch copper converters. The EPA estimates that the proposed NESHAP would reduce annual nationwide HAP emissions from the source category by approximately 20 percent or 34 megagrams per year (37.5 tons per year). The NESHAP provides protection to the public by requiring the affected primary copper smelters to meet emission standards that reflect the application of maximum achievable control technology (MACT).

DATES: *Comments.* The EPA will accept comments regarding this proposed NESHAP on or before June 19, 1998.

Public Hearing. If anyone contacts the EPA requesting to speak at a public hearing May 11, 1998 a public hearing will be held May 20, 1998 beginning at 10:00 a.m. For more information, see section IX.B of **SUPPLEMENTARY INFORMATION.**

ADDRESSES: *Comments:* Written comments (in duplicate, if possible) should be submitted to Docket No. A–96–22 at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (6102), 401 M Street, SW., Washington, DC 20460. The EPA requests that a separate copy of the comments also be sent to the contact person listed below. The docket is located at the above address in Room M–1500, Waterside Mall (ground floor).

A copy of today's notice and other materials related to this rulemaking are available for review in the docket. Copies of this information may be obtained by request from the Air Docket by calling (202) 260–7548. A reasonable fee may be charged for copying the docket materials.

Public Hearing. If anyone contacts the EPA requesting a public hearing by the required dates (see **DATES**), the public hearing will be held at the EPA Office of Administration Auditorium, Research Triangle Park, NC. Persons inquiring as to whether a hearing is to be held should call the contact person listed below.

FOR FURTHER INFORMATION CONTACT: Mr. Eugene Crumpler, Metals Group, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, NC, 27711, telephone number (919) 541–0881, facsimile number (919) 541–5600, electronic mail address ''crumpler.gene@epamail.epa.gov''.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are primary copper smelters (SIC 3339). No federal government entities nor State/local/tribal government entities would be regulated by final action on this proposal.

This description of the regulated entities is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by final action on this proposal. This description identifies the types of entities that the EPA is now aware could potentially be regulated by final action on this proposal. To determine whether your facility is regulated by final action on this proposal, you should carefully examine the applicability criteria in section V.A of this document, and in § 63.1440 of the proposed rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Technology Transfer Network

The text of today's notice is also available on the Technology Transfer Network (TTN), one of EPA's electronic bulletin boards. The TTN provides information and technology exchange in various areas of air pollution control. The service is free, except for the cost of a phone call. Dial (919) 541–5742 for up to a 14,400 BPS modem. The TTN also is accessible through the Internet at ''TELNET ttnbbs.rtpnc.epa.gov.'' If more information on the TTN is needed, call the HELP line at (919) 541–5348. The HELP desk is staffed Monday through Friday from 11 a.m. to 5 p.m.; a voice menu system is available at other times.

Electronic Access and Filing Addresses

The official record for this rulemaking, as well as the public version, has been established under Docket No. A–96–22 (including comments and data submitted electronically). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as confidential business information (CBI), is available for inspection from 8 a.m. to 5:30 p.m. Monday through Friday, excluding legal holidays. The official rulemaking record is located at the address in **ADDRESSES** at the beginning of this document.

Electronic comments can be sent directly to EPA's Air and Radiation Docket and Information Center at: ''A-and-R-Docket@epamail.epa.gov.'' Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments and data will also be accepted on disks in WordPerfect in 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number (A–96–22). No CBI should be submitted through electronic mail. Electronic comments on this proposed rule may be filed online at many Federal Depository Libraries.

Outline

The information in this notice is organized as follows.

I. Statutory Authority

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

II. Initial List of Categories of Major and Area Sources

Section 112 of the Clean Air Act (Act) directs the EPA to establish national standards to control hazardous air pollutant (HAP) emissions from major and area sources, as defined in the Act. Control of HAP emissions is achieved by promulgating for specific source categories emission standards (under sections 112(d) and 112(f)) or operational and work practice standards (under section 112(h)).

The initial list of the source categories selected by the EPA for regulation under section 112 of the Act was published on July 16, 1992 (57 FR 31576). The EPA published an updated list of source categories (61 FR 28202, June 4, 1996) to reflect source category listing revisions that the EPA has made since the initial list was published. ''Primary Copper Smelting'' is one of the approximately 170 categories of sources listed.

The ''Primary Copper Smelting'' source category consists of facilities that produce anode copper by first flash smelting of copper ore concentrates to obtain molten copper matte and then directly convert the molten matte to blister copper using a batch copper converting process. Batch copper converting is characterized by the use of Pierce-Smith or Hoboken design copper converters to produce blister copper from molten copper matte in discrete batches using a sequence of charging, blowing, skimming, and pouring steps.

The origin of the HAP emissions from the ''Primary Copper Smelting'' source category is metallic compound impurities (e.g., compounds containing arsenic, lead, or other types of heavy metals) that naturally occur in the copper ore deposits. The listing of the ''Primary Copper Smelting'' source category is based on the Administrator's determination that existing and new individual facilities comprising this source category may reasonably be anticipated to emit these HAP in sufficient quantity to be designated a major source as defined under the Act. Information subsequently collected by the EPA as part of this rulemaking confirms that existing and new facilities in the ''Primary Copper Smelting'' source category do emit or have the potential to emit at levels greater than 10 tons per year (tpy) of an individual HAP or more than 25 tpy of total HAP and therefore are major sources. The primary source of these emissions are process fugitive emissions from the batch copper converting process. A detailed process description for the ''Primary Copper Smelting'' source category and the associated HAP emissions is presented in sections III.A and III.B to this preamble.

Since the listing of the ''Primary Copper Smelting'' source category, a new smelter operated by Kennecott Copper, in Garfield, Utah, has been constructed. This smelter employs a new continuous flash converting technology that is considerably different from the conventional batch converting process used at the smelters which form the basis for the listing of the ''Primary Copper Smelting'' source category. The design and operation of the continuous flash converting process eliminates many of the potential air pollutant emission sources associated with batch copper converting. As a result, the smelter does not emit HAP at major source levels and is therefore an area source.

III. Background

A. ''Primary Copper Smelting'' Source Category Description

The ''Primary Copper Smelting'' source category is comprised of a total of six existing facilities nationwide. Each of these facilities produces anode copper from copper ore concentrates using flash smelting integrated with batch copper converting. All of the primary copper smelters are owned and operated by major corporations (two companies each own and operate two smelters). Each smelter is located in relatively close proximity to the copper mines supplying the copper ore concentrate processed at the individual smelter. Three smelters are located in southeastern Arizona. Two smelters are located in southwestern New Mexico. One smelter is located in El Paso, Texas.

Copper ore deposits typically contain less than 1 percent copper. Once the ore is extracted from the ground, the ore is beneficated at the mine site to produce a processed form of copper ore with a higher copper content. Concentration of the ore is accomplished by crushing, grinding, and flotation purification to obtain a processed ore concentrate (referred to hereafter as ''copper concentrate'') typically having a concentration of 15 to 25 percent copper, 25 to 30 percent sulfur, 25 percent iron, 10 to 15 percent water, and small amounts of other metals. The type and quantity of these metals in the copper concentrate vary depending on the source of the ore, and can include arsenic, antimony, bismuth, cadmium, lead, selenium, magnesium, aluminum, cobalt, tin, nickel, tellurium, silver, gold and palladium. The copper concentrate is shipped to the primary copper smelter by trucks, rail cars, and, in some cases, slurry pipelines.

All domestic primary copper smelters operate flash smelting furnaces. Once the copper concentrate is received at the smelter, the copper concentrate must be further processed before feeding it to the flash smelting furnace. Each smelter operates a combination of crushers and mills to obtain the proper size material for feeding to the smelting furnace. The copper concentrate is mixed with fluxes (materials that facilitate formation of slag containing iron oxides and other impurities). At most existing smelters, the moisture content of the copper concentrate is reduced by passing the copper concentrate through either a fluidized-bed dryer or rotary dryer. One existing smelter currently is able to feed its copper concentrate directly to the smelting furnace without prior drying.

The prepared copper concentrate and finely ground fluxes are injected together with oxygen and preheated air into the furnace which is maintained at approximately 1,000°C (1,830°F). The furnace uses the heat generated from the partial oxidation of the sulfide content in the copper concentrate to provide most, if not all of the energy required for the smelting process. Supplemental heat is supplied, as needed, using oil-fired or gas-fired burners to maintain the required smelting temperature. The resulting molten material collects in a bath at the bottom of the furnace. This molten bath separates into two layers. The lighter density material layer is called ''slag'' and contains iron silicates and other impurities. The heavier density material layer is called ''copper matte'' and contains up to 65 percent copper in the form of copper sulfide. The off-gases exhausted from the furnace contain concentrated sulfur dioxide (SO_2). These off-gases are treated in a contact sulfuric acid plant to remove 98 to 99 percent or more of the SO_2 in the gases before being vented to the smelter main stack.

The molten copper matte and slag are removed from the flash smelting furnace through tapholes along the side of the furnace. Separate tapholes are used to remove the copper matte and the slag. The molten material released through a taphole empties into a heated trough (called a ''launder''). The molten copper matte flows down the launders into large ladles for transfer to the batch copper converters. The molten slag from the furnace either is directly disposed by transferring it in slag pots to an on-site slag pile or, at some smelters, processed further before final disposal to increase the copper yield.

At two of the existing smelters, molten slag from the flash furnace can be transferred to a second furnace (referred to hereafter as a ''slag cleaning vessel''). In the slag cleaning vessel, the slag from the flash furnace is treated with coke or iron sulfide. Residual copper in the slag is converted to form a copper sulfide layer which is tapped and transferred to the batch copper converters. The slag is tapped and discarded. Off-gases from the slag cleaning vessel contain low concentrations of SO_2 and are typically vented to a separate wet scrubber control device.

Converting is an oxidation process that removes most of the sulfur, iron, and other impurities in the copper matte to produce blister copper (a 96 to 99 percent pure copper). Batch copper converting is performed using large refractory-lined cylindrical steel vessels mounted on trunnions at either end. A large circular opening on the vessel body (the ''converter mouth'') provides access for adding or removing molten materials and also allows gaseous by-products to escape from the converter. A drive mechanism is used to rotate the position of the converter mouth for charging materials to the converter and pouring molten materials from the converter.

Batch copper converting produces blister copper in an 8-to-12 hour batch cycle using three to five converters aligned in a row inside the converter building. Operation of the converters is staggered such that, at any given time, not all of the converters are being used for blister copper production, and those that are ''on-line'' are operating in different stages of the copper converting cycle. The batch copper converting cycle follows a sequence of steps involving charging of molten matte to the converter, blowing oxygen through the molten bath, skimming off slag, and finally pouring the blister copper at the end of the cycle. Material is added to or removed from each converter using large ladles which are positioned and transported using a traveling overhead crane. Off-gases from each converter are vented during blowing to a common ventilation system for routing to the sulfuric acid plant.

A converter batch cycle begins by charging an empty converter with molten matte tapped from the flash smelting furnace. Air or oxygen-enriched air is then blown into the molten matte through a series of pipes (called ''tuyeres'') on the side of the converter. The iron sulfide in the matte is preferentially oxidized to form iron oxides and SO_2. The SO_2 is exhausted from the converter in the off-gases vented to the sulfuric acid plant operated at the smelter site. Flux is added to combine with the iron oxide and forms a top layer of iron silicate slag on the molten bath in the converter. The resulting slag layer is removed from the molten bath by discontinuing blowing and then rotating the converter mouth down to skim off the slag. The blowing and slag skimming steps are repeated until an adequate amount of relatively pure copper sulfide (called ''white metal'') accumulates in the converter. A final blow oxidizes the copper sulfide to SO_2, and blister copper forms. At this time, the blister copper is poured from the converter for transfer to the copper refining operations. The converter is then available to begin a new batch cycle.

Two different batch copper converter designs are used in the United States. Five smelters use the Pierce-Smith converter design. An alternative to the Pierce-Smith converter is the Hoboken converter design, which is used by one domestic smelter. The design and operation of these two types of batch copper converters is similar with the exception of the means by which off-gases vented from the converter are captured for venting to the sulfuric acid plant.

The Pierce-Smith converter design uses a large external hood to cover the converter mouth when the converter is rotated into position for the blowing. The hood for each converter in the converter aisle is connected to a common ventilation system that exhausts the captured off-gases to the sulfuric acid plant.

In contrast, the Hoboken converter design does not use an external hood for capture of the off-gases during blowing. The Hoboken converter is fitted with a ''U''-shaped side flue located at one end of the converter. The side flue allows siphoning of the converter off-gases directly from the interior of the converter for venting to the sulfuric acid plant. Off-gases are prevented from escaping through the uncovered Hoboken converter mouth during blowing by operating the ventilation system draft at a level such that a slight negative pressure is maintained at the converter mouth.

At the end of the batch converting cycle, the blister copper is poured from the converter for further processing by fire refining to produce anode copper. Fire refining of blister copper is conducted in a cylindrical vessel similar to a batch copper converter. Flux is added and air is blown through the molten blister copper mixture to oxidize the copper and any remaining impurities. The impurities are removed as slag. The remaining copper oxide is then subject to a reducing atmosphere to form a very high purity copper. The fire-refined copper is then cast into anodes for further electrolytic refining.

The anode copper is processed by an electrolytic process to obtain commercial grade copper for sale as a product. Electrolytic refining separates copper from the remaining impurities by electrolysis in a solution containing copper sulfate and sulfuric acid. The copper anode is dissolved and the elemental copper is re-deposited at the cathode. As the copper anode dissolves, residual metallic impurities in the anode copper precipitate in the acid solution and form a sludge. The resulting cathode copper is now more than 99.9 percent pure and is cast into bars, ingots, or slabs for sale.

B. HAP Emissions

Under section 112(b) of the Act, Congress listed specific chemicals, compounds, or groups of chemicals that are HAP's subject to control under a NESHAP. Metals beside copper naturally occur in copper ore deposits. These metallic ''impurities'' include metals that are listed as HAP. Lead and arsenic are found in the largest quantities in copper ore mined and smelted in the United States. Lesser quantities of antimony, beryllium, cadmium, chromium, cobalt, manganese, nickel, and selenium also are frequently present in U.S. copper ore. These metallic impurities in the copper ore can be released into the atmosphere in the form of particulate matter (PM) during certain smelting operations, and are the source of the HAP emissions from primary copper smelters. The composition and quantity of the potential HAP emissions from a given smelter is directly related to the level of metal impurities in the copper concentrate processed at the smelter. The organic chemicals and acid gases that are listed as HAP have no or minimal potential to be emitted to the atmosphere from domestic primary copper smelters.

On an industry-wide basis, the composition of the HAP emissions from primary copper smelters is approximately 50 percent lead compounds, 25 percent arsenic compounds, and lesser amounts of the other metals. The composition and quantity of the potential HAP emissions from a given smelter is directly related to the level of metal impurities in the copper concentrate processed at the smelter. The sources of HAP emitted from smelters using flash smelting furnaces integrated with batch copper converters can be characterized as: (1) process HAP emissions; (2) process fugitive HAP emissions; and (3) fugitive dust emissions. Electrolytic refining of anode copper does not produce any metallic HAP emissions.

1. Process HAP Emissions

Process HAP emissions are the HAP contained in the primary exhaust gas stream (i.e., off-gases) discharged from a process vessel. At primary copper smelters, the potential sources of process HAP emissions are the exhaust gas streams from copper concentrate drying, copper smelting, and copper converting operations. Process HAP emissions from the copper concentrate dryer are generated by the entrainment of particulate matter containing HAP in the exhaust gas stream from the dryer. A second source of process HAP emissions is the metal compound vapors in the off-gases exhausted from the flash smelting furnace. At those smelters operating slag cleaning vessels, process HAP emissions are released in the off-gases exhausted from the slag cleaning vessel. Process HAP emissions from the batch copper converters result when off-gases exhausted during blowing are not captured and controlled.

2. Process Fugitive HAP Emissions

Process fugitive emissions are those emissions associated with a particular process that are released directly from the process but are not emitted through a flue or duct in the process exhaust gas stream. At primary copper smelters, the potential sources of process fugitive HAP emissions primarily are associated with the flash smelting and batch copper converting operations. Hot fumes and gases containing metallic HAP are intermittently released when molten copper matte and slag are tapped from the flash smelting furnace or a slag cleaning vessel. Process fugitive HAP emissions from batch copper converters result when the off-gases generated during blowing escape capture. In the case of the Pierce-Smith converter design, this can be due to leakage around the primary hood. Improper ventilation system operation will allow off-gases to escape from the open converter mouth in the case of the Hoboken converter design. Also, process fugitive HAP emissions from either copper converter design can result during those times that the converter contains molten material and is rolled out from the blowing position. If not captured, process fugitive HAP emissions will be released to the atmosphere from openings in the converter building such as roof monitor vents or exhaust fans.

3. Fugitive Dust Emissions

Fugitive dust HAP emissions at primary copper smelters can be generated when dust from copper concentrate or other materials containing metallic HAP is released into the outdoor air. The entrainment of dust containing metallic HAP into the outdoor air may be caused by natural events (e.g., wind erosion of feed storage piles) or by operations conducted by the facility personnel. Potential fugitive dust emission sources at primary copper smelters include: (1) Dust entrained when transporting on unpaved roads at the smelter site, bulk copper-concentrate and other materials containing HAP in dump trucks, front-end loaders, and other vehicles; (2) dust generated when unloading copper ore concentrates from trucks or railcars; (3) wind erosion of outdoor material storage piles; (4) dust entrained when blending copper concentrate with other feed constituents in the bedding area; and (5) transferring copper ore concentrate or other HAP-containing materials to or from conveyor systems.

4. Existing Air Emission Controls

Air emission controls presently are used at all of the existing primary copper smelters in the United States to comply with Federal and State regulations limiting emissions of SO_2 and total particulate matter (PM). At each of these copper smelters, exhaust gases from the copper concentrate dryer are vented to either a baghouse or electrostatic precipitator (ESP) for control of PM emissions. Emissions of SO_2 are controlled by venting the process off-gases from flash smelting furnaces and batch copper converters to a contact sulfuric acid production process. At those smelters operating slag cleaning vessels, SO_2 emissions are controlled by venting the process off-gases to wet scrubbers. In addition to these air emission controls, each smelter operates different combinations of other types of controls for certain process fugitive sources and fugitive dust sources to comply with requirements imposed by the individual State standards and air permit conditions applicable to the smelter.

C. Relationship to Other Rules

The EPA has promulgated national emission standards applicable to primary copper smelters under two previous Clean Air Act rulemakings.

The first rule is the new source performance standards (NSPS) for primary copper smelters (40 CFR part 60, subpart P). This NSPS establishes a PM emission limit for new copper concentrate dryers and an SO_2 emission limit for new smelting furnaces and new copper converters. The NSPS does not specifically address HAP emissions from primary copper smelters.

The second rule applicable to primary copper smelters is the national emission standards for inorganic arsenic emissions from primary copper smelters (40 CFR part 61 subpart O). This rule establishes air emission control requirements for primary copper smelters at which the total annual average arsenic charging rate to the copper converters at the smelter is equal to or greater than 75 kilograms per hour (kg/hr). This rule was promulgated in 1986 before the changes to the NESHAP regulatory program required by the 1990 Amendments. Also, since the rule's promulgation date, the primary copper smelter industry has changed significantly with the industry-wide conversion to flash smelting technologies and a number of smelter closings. None of the primary copper smelters presently operating in the United States processes copper ore concentrates with arsenic content levels that require smelter owners and operators to meet the air emission control standards under subpart O (i.e., the annual average total arsenic charging rate for the copper converter department at each smelter is less than 75 kg/hr).

IV. NESHAP Decision Process

A. Source of Authority for NESHAP Development

The amended section 112 of the Act replaces the EPA's previous NESHAP development system of pollutant-by-pollutant health-based regulations that proved ineffective at controlling the high volumes and concentrations of HAP in air emissions. The 1990 Amendments readdress this deficiency by requiring the EPA to develop NESHAP by first establishing control technology-based standards for those sources emitting HAP, and that these control technology-based standards may later be reduced further to address residual risk that may remain even after implementing the technology-based controls.

B. Criteria for Development of NESHAP

The statutory directives set out in section 112 of the Act require NESHAP to be established for control of HAP emissions from both new and existing sources. The statute requires that the standards reflect the maximum degree of reduction of HAP emissions that is achievable taking into consideration the cost of achieving the emission reduction, any nonair quality health and environmental impacts, and energy requirements.

Emission reductions may be accomplished through application of measures, processes, methods, systems, or techniques, including, but not limited to: (1) reducing the volume of, or eliminating emissions of, such pollutants through process changes, substitution of materials, or other modifications, (2) enclosing systems or processes to eliminate emissions, (3) collecting, capturing, or treating such pollutants when released from a process, stack, storage, or fugitive emissions point, (4) design, equipment, work practice, or operational standards (including requirements for operator training or certification) as provided in section 112(h), or (5) a combination of the above. [See section 112(d)(2).]

To develop a NESHAP, the EPA collects information about the source category, including information on the emission source characteristics, control technologies, data from HAP emissions tests at well-controlled facilities, and information on the costs and other energy and environmental impacts of emission control techniques. The EPA uses this information to analyze possible regulatory approaches.

Although NESHAP are normally formatted in terms of numerical emission limits, alternative approaches are sometimes necessary. In some cases, for example, physically measuring emissions from a source may be impossible, or at least impractical, because of technological and economic limitations. Section 112(h) authorizes the Administrator to promulgate a design, equipment, work practice, or operational standard, or a combination thereof, in those cases when it is not feasible to prescribe or enforce an emissions standard.

If sources in a given source category are major sources of HAP emissions, then section 112 requires the EPA to establish national emission standards for these sources based on application of maximum achievable control technology (MACT). The regulation of the area sources in a source category, if any, is at the discretion of the EPA. If there is a finding by the EPA of a threat of adverse effects on human health or the environment from the area sources, then the source category can be added to the list of area sources to be regulated.

C. Determining the MACT Floor

After the EPA has identified the specific source categories or subcategories of major sources to regulate under section 112, it must set MACT standards for each category or subcategory. Section 112 limits the EPA's discretion by establishing a minimum baseline or ''MACT floor'' for these standards. For new sources, the standards for a source category or subcategory cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source, as determined by the Administrator. [See section 112(d)(3).]

The MACT standards for existing sources can be less stringent than MACT standards for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources (excluding certain sources) for categories and subcategories with 30 or more sources, or the best-performing 5 sources for categories or subcategories with fewer than 30 sources. [See section 112(d)(3).]

After the MACT floor has been determined for a new or existing source in a source category or subcategory, the Administrator must set standards that are no less stringent than the MACT floor. Such standards must then be met by all major sources within the category or subcategory.

Section 112(d)(2) specifies that the EPA shall establish MACT standards that require the maximum degree of reduction in emissions of hazardous air pollutants

> * * * that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable* * *

In establishing MACT standards, the Administrator may distinguish among classes, types, and sizes of sources within a category or subcategory. [See section 112(d)(1).] For example, the Administrator could establish two classes of sources within a category or subcategory based on size and establish a different emission standard for each class, provided both standards are at least as stringent as the MACT floor for that class of sources.

The next step in establishing MACT standards is the investigation of regulatory alternatives. With MACT standards, only alternatives at least as stringent as the MACT floor may be selected. Information about the source category is analyzed to evaluate national impacts, including HAP emission reduction levels, costs, energy, and secondary impacts. Several regulatory alternative levels (which may be different levels of emissions control or different levels of applicability or both) are then evaluated to select the regulatory alternative that best reflects the appropriate MACT level.

The selected alternative may be more stringent than the MACT floor, but the control level selected must be technically achievable. In selecting a regulatory alternative that represents MACT, the EPA considers the achievable emission reductions of HAP (and possibly other pollutants that are co-controlled), cost, and economic impacts, energy impacts, and other environmental impacts. The objective is to achieve the maximum degree of emissions reduction without unreasonable economic or other impacts. [See section 112(d)(2).] The regulatory alternatives selected for new and existing sources may be different because of different MACT floors, and separate regulatory decisions may be made for new and existing sources.

The selected regulatory alternative is then translated into a proposed rule. The rule implementing the MACT decision typically includes sections on applicability, standards, test methods and compliance demonstration, monitoring, reporting, and recordkeeping. The preamble to the proposed rule provides an explanation of the rationale for the decision. The public is invited to comment on the proposed rule during the public comment period. Based on an evaluation of these comments, the EPA reaches a final decision and promulgates the final rule.

V. Summary of the Proposed Standards

A. Applicability

The proposed NESHAP applies to owners and operators of copper smelters for which both of the following applicability conditions apply: (1) the facility produces anode copper by first flash smelting of copper ore concentrates to obtain molten copper matte and then converting the molten matte to blister copper using batch copper converters, and (2) the facility is a major source of HAP as defined in 40 CFR 63.2. If either one of these two conditions do not apply to a given smelter, then the owner and operator of the smelter would not be subject to the proposed NESHAP.

The first applicability condition requires that the copper smelter produces blister copper using batch copper converters. For the purpose of implementing the rule, a ''batch copper converter'' would be defined as one of the following copper converter designs: a Pierce-Smith converter; a Hoboken converter; or a similar design copper converter that produces blister copper in discrete batches using a sequence of charging, blowing, skimming, and pouring steps. A batch copper converter does not use continuous flash converting technology. Thus, the owner and operator of a copper smelter that uses continuous flash copper converters would not be not subject to the proposed NESHAP (the rationale for this decision is presented in Section II of this preamble).

The second applicability condition requires that the copper smelter be a major source of HAP emissions, as defined in 40 CFR 63.2. This means the copper smelter emits or has the potential to emit, considering application of air emission controls, 10 tpy or more of any single HAP compound or 25 tpy or more of any combination of HAP compounds. The proposed NESHAP would not apply to a copper smelter that is not a major source as defined by the EPA.

B. Sources To Be Regulated

The proposed NESHAP establishes air emission control requirements for specific HAP emission sources operating at a primary copper smelter subject to the rule. The HAP emission sources that would be affected by this rule are: (1) The copper concentrate dryer, (2) the flash smelting furnace, (3) the slag cleaning vessel, if used at a smelter, (4) the batch copper converters, and (5) the fugitive dust sources associated with the handling and storage of copper concentrate and other materials containing metallic HAP.

For the purpose of implementing the rule with respect to batch copper converters, the affected source would be the entire copper converter department. This area would be defined in the rule to be all of the batch copper converters and the associated capture systems used to collect gases and fumes emitted during copper converter operations (e.g., primary hood ventilation system, secondary hood ventilation system if used).

C. Emission Limits and Requirements

1. Copper Concentrate Dryers

The proposed standards establish emission limits for particulate matter contained in the exhaust gases discharged from each affected copper concentrate dryer. Separate emission standards would be established for existing sources and new sources. The standard would limit the concentration of particulate matter discharged from existing copper concentrate dryers to no more than 50 milligrams per dry standard cubic meter (mg/dscm) (approximately 0.022 grains per dry standard cubic foot (gr/dscf)). New copper concentrate dryers would be limited to no more than 23 mg/dscm (approximately 0.01 gr/dscf) of particulate matter. The rule would allow an owner or operator to use any type of particulate control device (i.e., baghouse, electrostatic precipitator, or wet scrubber) that meets the applicable PM emission limit.

2. Smelting Furnaces

The proposed standards for smelting furnaces are the same for both existing sources and new sources. The proposed rule requires the SO_2 rich off-gases from the smelting furnace to be vented to a by-product sulfuric acid plant or other type of sulfur recovery process unit that requires comparable levels of gas stream conditioning and pre-cleaning to remove particulate matter. The rationale for proposing an equipment standard for this source is described in section VII.C.3 of this document. In addition, the proposed rule requires that the hot metal vapors and fumes released when tapping molten matte or slag from the smelting furnace be captured using good ventilation practices (e.g., use of local ventilation hoods over the tapping port and launder) and vented to a control device. Particulate matter emissions from the control device would be limited to no more than 16 mg/dscm (approximately 0.007 gr/dscf).

3. Slag Cleaning Vessels

The proposed NESHAP establishes standards for those primary copper smelters that operate slag cleaning vessels as part of the copper smelting process. The requirements of proposed standards would be the same for existing sources and new sources. Particulate matter emissions contained in the off-gases exhausted from a slag cleaning vessel would be limited to no more than 46 mg/dscm (approximately 0.02 gr/dscf). As an alternative to complying with this standard, the rule would allow an owner or operator to exhaust the off-gases from the slag cleaning vessel directly to the by-product sulfuric acid plant (or other type of sulfur recovery process unit) used to control the off-gases from the smelting furnace.

Like the standards for smelting furnaces, the proposed rule also requires that the hot metal fume emissions released when tapping molten matte or slag from the slag cleaning vessel be captured using good ventilation practices and vented to a suitable control device. Consistent with the standards for smelting furnaces, PM emissions from this control device would be limited to no more than 16 mg/dscm (approximately 0.007 gr/dscf).

4. Batch Copper Converters

The proposed NESHAP establishes emission standards for particulate matter and visible emissions from the batch copper converters at primary copper smelters subject to the rule. Separate standards would be established for existing sources and new sources. For existing sources, the proposed NESHAP establishes standards requiring that particulate matter emitted from the copper converters during blowing be captured and vented to a suitable control device. Different standards for existing sources would be established based on the type of copper converter designs used at the primary copper smelters (i.e., Pierce-Smith converters or Hoboken converters). For new sources, the proposed NESHAP establishes standards requires that particulate matter emitted from the copper converters during all operating modes be captured and vented to a suitable control device. The same standards for new sources would apply regardless of the design of the copper converters used at a smelter.

Existing Pierce-Smith Converters. The proposed standards for existing Pierce-Smith converters require that SO_2 rich off-gases generated during blowing be captured by a primary hood ventilation system and vented directly to the by-product sulfuric acid plant (or other type of sulfur recovery process unit) used to control the SO_2 rich gases exhausted from the smelting furnace. Additional capture devices (e.g., secondary hoods) vented to a control device would be required to collect PM emissions that escape capture by the primary hood as needed to achieve the visible emission limit established for the copper converter department. Particulate matter emissions from the control device would be limited to no more than 16 mg/dscm (approximately 0.007 gr/dscf).

The proposed rule requires that the primary hood and any supplemental capture system used to comply with the requirements of the rule be operated with sufficient ventilation draft such that the visible emissions exiting the roof monitors or roof exhaust fans on the building housing the copper converter department do not exhibit an average opacity greater than 3 percent as determined using the test protocol specified in the rule. (This test protocol is described later in this section under ''Performance Testing Requirements''). The owner or operator would be required to subsequently operate the capture system such that the system maintains the operating settings established at the time the owner or operator initially demonstrates compliance with this visible emission limit. Failure to do so would be a violation of the standard. The visible emission limit would apply only at those times when a performance test is conducted while establishing the capture system operating settings.

Existing Hoboken Converters. The proposed standards for existing Hoboken converters require that the SO_2-rich off-gases be evacuated directly from the interior of the copper converter (through the converter's side flue intake) to the by-product sulfuric acid plant (or other type of sulfur recovery process unit) used to control the SO_2-rich gases exhausted from the smelting furnace. In addition, the proposed rule requires that the side flue intake of each Hoboken copper converter be operated with sufficient ventilation draft during blowing such that the visible emissions exiting the roof monitors on the building housing the copper converter department do not exhibit an average opacity greater than 4 percent. Compliance with this visible emission limit would be demonstrated by following the same requirements and procedures described above for existing Pierce-Smith converters.

New Copper Converters. During the periods when a copper converter is positioned for blowing, the proposed standards for new sources require that the SO_2-rich off-gases generated during blowing be captured and vented directly to the by-product sulfuric acid plant (or other type of sulfur recovery process unit) used to control the SO_2-rich gases exhausted from the smelting furnace. In addition, the proposed rule requires that the capture system be designed and operated with sufficient ventilation draft whenever molten material is in the copper converter such that no visible emissions exit the building housing the copper converter department. The rule would require these captured gas streams to be vented to a suitable control device. Particulate matter emissions from the control device would be limited to no more than 16 mg/dscm (approximately 0.007 gr/dscf).

The proposed visible emission limit would provide flexibility by allowing the owner or operator to choose the capture system design to be used at a given smelter. The capture system design could use multiple intake and duct segments through which the ventilation rates are controlled independently of each other and individual duct segments could be connected to separate control devices (e.g., use of individual secondary air curtain hoods on each copper converter in combination with a building evacuation system). The occurrence of visible emissions from the building housing the copper converter department would be determined using Method 22 in appendix A of 40 CFR part 60.

5. Fugitive Dust Sources

Under the proposed NESHAP, the owner or operator of a primary copper smelter subject to the rule is required to control fugitive dust emissions according to a site-specific plan. This written plan would be prepared by the owner or operator and would describe the specific control measures that are used to limit fugitive dust emissions from the individual sources at the smelter site. The duty of the owner or operator to operate the smelter according to the fugitive dust control plan would be incorporated into the operating permit for the smelter site that is issued by the designated permitting authority under 40 CFR part 70 (the actual fugitive dust control plan for a given smelter would not be part of the permit).

The proposed rule defines a fugitive dust source as a source of PM emissions resulting from the handling, storage, transfer, or other management of solid copper-bearing materials defined in the rule where the source is not associated with a specific process, process vent, or stack. Fugitive dust emissions can be generated by a variety of different operations conducted at a primary smelter, such as dump truck traffic on smelter roadways; unloading of copper concentrates from dump trucks or railcars; wind erosion of outdoor piles used to store copper concentrate; blending of copper concentrate and other feed constituents in the bedding area; and uncovered conveyor systems used to transfer copper concentrate. Examples of control measures that could be included in the written fugitive dust control plan include, but are not limited to: erecting a building or other enclosure over the copper concentrate bedding area; covering conveyor systems and using local ventilation hoods vented to a control device at the conveyor transfer points; placing copper concentrate stockpiles below grade or installing wind screens or wind fences around the stockpiles; and spraying water or applying appropriate dust suppression agents on smelter roadways or outdoor storage piles.

6. Equivalent Standard for Combined Exhaust Gas Streams

At some existing primary copper smelters, exhaust gas streams from several sources are combined before being discharged to a single control device. The proposed rule addresses this situation by including an equation with which the owner or operator calculates the allowable PM emission limit for the combined exhaust gas stream based on the individual PM emission limits specified in the rule and the volumetric flow rates for the affected source gas streams composing the combined exhaust gas stream. This equivalent PM emission limit could be applied to a combined gas stream that contains any combination of the gas streams from the following affected sources: (1) exhaust gas stream from a copper concentrate dryer; (2) exhaust gas stream from a smelting vessel tapping port capture system; (3) exhaust gas stream from a slag cleaning vessel tapping port capture system; and (4) exhaust gas stream from a Pierce-Smith copper converter capture system other than the primary hood capture system (e.g., secondary hood, building evacuation system).

D. Compliance and Maintenance Requirements

1. Compliance Dates

Compliance with the air emission control standards under the NESHAP would be required within 2 years from the date of promulgation for existing sources and at startup for new or reconstructed sources. An ''existing source'' is a source that commenced construction or reconstruction before today's date. Sources that commence construction or reconstruction on or after today's date would be considered to be a ''new source.''

2. Operation and Maintenance Requirements

At all times, including periods of startup, shutdown, and malfunction, the owner or operator would be required to operate and maintain each affected source, including associated air pollution control equipment, according to the requirements in section 63.6 in the NESHAP general provisions (40 CFR part 63, subpart A). As part of the written startup, shutdown, and malfunction plan required by section 63.6(e)(3), the owner or operator would be required to include a description of the corrective action procedures to be implemented to restore a malfunctioning capture system or control device to proper operation.

E. Performance Testing Requirements

1. Particulate Matter Emission Performance Tests

Compliance with each of the PM emission limits in the proposed rule would be determined by performance tests that the owner or operator performs according to the NESHAP general provisions in § 63.7 under 40 CFR part 63, subpart A, and using specific EPA reference test methods. For each performance test, the sampling locations would be determined using EPA Method 1; the stack gas velocity and volumetric flow rate would be determined using EPA Method 2; and the gas analysis would be performed using EPA Methods 3 and 4. Each of these methods is included in appendix A to 40 CFR part 60. Measuring PM emissions would be performed using EPA Method 5, ''Determination of Particulate Matter Emissions from Stationary Sources'', in 40 CFR part 60, appendix A (Method 5D would be required for positive pressure baghouses). The average of three test runs (each run having a minimum sampling time of 60 minutes and minimum sampling volume of 0.85 dscm) would be used to determine compliance with the applicable PM emission limit specified in the rule. During the performance test, the owner or operator also would establish limits for appropriate control device operating parameters based on the actual values measured during this test.

2. Visible Emission Performance Tests

Existing Copper Converters. Compliance of existing Pierce-Smith or Hoboken copper converters with the applicable visible emission limit would be demonstrated using a specific test protocol that is being proposed in the rule. The proposed protocol is based on performing a series of opacity readings during specific copper converter operations using Method 9, ''Visual Determination of the Opacity of Emissions from Stationary Sources,'' in 40 CFR part 60, appendix A. The opacity observations would be made by a team of two qualified visible emission observers during the period when the primary copper smelter is operating under conditions representative of the smelter's normal blister copper production rate.

The total time of the observation period would be of sufficient duration to obtain a minimum of 20 uninterrupted 6-minute intervals during which opacity readings made using Method 9 (i.e., 24 readings, each reading made at a 15-second interval) are recorded for those conditions when at least one copper converter is operating in the blowing mode with no visible emission interferences from other smelter operations occur as specified in the rule. The total observation period may be divided into two or more segments performed on different days if a change in the outdoor conditions or copper production conditions prevents the required number of opacity readings from being obtained during one continuous period.

Throughout the opacity observation period, an additional person familiar with the primary copper smelter operation is stationed inside the building housing the copper converters to visually monitor the copper converter operations. These indoor process monitors maintain a log recording the process information. During the observation period, the owner or operator also would establish minimum or maximum limiting values, as appropriate, for selected capture system operating parameters based on the actual values measured during the test.

Upon completion of the opacity observations, the data recorded by the outdoor opacity observers and the indoor process monitors are summarized in a tabular format that is specified in the rule. Next, 6-minute average opacity values are calculated for all periods listed in the data summary table composed of six consecutive minutes of blowing with no interferences. A minimum of twenty 6-minute periods are required for the compliance calculation (if more than twenty 6-minute periods are included in the data summary table, then all of the 6-minute periods included in the table would be used for the compliance calculation). These twenty 6-minute periods (or more if applicable) are averaged to obtain a single opacity value to determine compliance with the visible emission limit applicable to a given smelter. Refer to the proposed rule text for more information regarding the test conditions, test notification requirements, procedure for conducting the opacity observations and gathering the converter process information, and the methods to be used for data reduction and calculation of the average opacity value.

New Copper Converters. Compliance of new copper converters with the no visible emission limit specified in the proposed rule would be demonstrated using Method 22, ''Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares,'' in appendix A of 40 CFR part 60. Method 22 requires only a determination as to whether a visible emission occurs and does not require that the opacity of the emissions be determined. A minimum observation period of no less than 2 hours during normal copper production operations is proposed for the performance test.

F. Inspection and Monitoring Requirements

1. Capture System Inspections

Regular visual inspections of all capture systems used to comply with the standards would be required under the proposed NESHAP. The owner or operator would be required to conduct at least once per month a visual inspection of each capture system operated to meet standards under the rule. These inspections would involve visually inspecting all of the capture system components to check for any defects or damage that could diminish or impair capture system performance. Examples of these defects or damage include, but are not limited to: openings through which gas can escape as indicated by the presence of cracks, holes, or gaps in hoods or ductwork; flow constrictions caused by dents or accumulated dust in ductwork; and reduced fan performance as indicated by fan blade erosion. If a defect is detected, then the owner or operator would be required to replace or repair the defective or damaged components consistent with the measures for corrective action detailed in the facility startup, shutdown and malfunction plan. Completion of the repair would be required as soon as practical but no later than 30 calendar days after the date the defect is detected. Delay of repair beyond 30 calendar days of detecting the capture system defect would be allowed under special circumstances as specified in the rule.

2. Capture System Monitoring

Monitoring of appropriate operating parameters would be required for the copper converter capture system operated to comply with the converter building visible emission limit. No monitoring requirements for other capture systems operated at the smelter (e.g., smelting furnace tapping port and launder capture systems, slag cleaning vessel tapping port and launder capture systems) would be specified under the proposed rule.

The rule would not specify the individual operating parameters to be monitored by the owner or operator for the copper converter capture system. Instead, each owner or operator would be required to select a set of operating parameters appropriate for the capture system design used at the smelter that the owner or operator determines to be a representative and reliable indicator of the range within which the equipment can operate and achieve the visible emission limit. During the initial performance test to demonstrate compliance of the copper converter capture system with the applicable visible emission limit, the owner or operator would establish minimum operating parameter limits (or a maximum operating parameter limit if appropriate) for selected capture system operating parameters. The rule would require that the owner or operator install, calibrate, operate, and maintain monitoring devices equipped with a recorder to measure and record at 15-minute or more frequent intervals the actual value for each operating parameter for which operating limits are established. In cases when the monitoring regimen includes periodic checking by facility workers of the capture system fan motor amperages and damper positions, checks are to be made at least once-per-shift.

The owner or operator would be required to regularly inspect the data recorded by the monitoring system at a sufficient frequency to ensure the capture system continues to operate properly. If the recorded actual value of a selected operating parameter is less than the minimum operating parameter limit (or, if applicable, greater than the maximum operating parameter limit) established for the parameter, then an excursion would be determined to have occurred. The proposed rule requires that within 1 hour of detecting the excursion, the owner or operator initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan as necessary to restore the operation of the capture system to the proper operating settings. Failure to take the necessary corrective actions to correct the operating problem would be a violation of the standard. Also, for a given operating parameter, if excursions occur six times in any semi-annual reporting period, then any subsequent excursion of that operating parameter during the reporting period would be a violation of the standard. For the purpose of determining the number of excursions in a semi-annual reporting period, only one excursion would be counted in any given 24-hour period.

3. Control Device Inspection and Monitoring

Baghouses. For each baghouse used to comply with the PM emission limits, the owner or operator would be required to operate the baghouse according to a written standard operating procedures (SOP) manual. This SOP manual would be prepared by the owner or operator, and the manual would describe in detail the inspection, maintenance, bag leak detection, and corrective action procedures to be implemented by the owner or operator for the baghouse. Specific inspection, maintenance, and monitoring requirements to be included by the owner or operator in the SOP manual are specified in the proposed rule. The proposed rule also requires the use of a bag leak detector system equipped with an audible alarm. Failure by the owner or operator to operate and maintain the baghouse according to the requirements specified in the SOP manual would be a violation of the standard. The inspection and monitoring requirements would not apply to a baghouse that is included in the smelter's fugitive dust control plan and exclusively operated to control fugitive dust emissions.

Venturi Wet Scrubbers. If an owner or operator elects to use a venturi wet scrubber to comply with a PM emission limit, the proposed rule requires that the owner or operator monitor the scrubber pressure drop and water flow rate. During the initial performance test to demonstrate compliance with the applicable standard, the owner or operator would establish minimum operating values for each of these parameters based on the actual values measured during this test. The rule would require that the owner or operator install, calibrate, operate, and maintain monitoring devices equipped with a recorder to measure and record at 15-minute or more frequent intervals the actual value for each operating parameter. An excursion would be determined to have occurred when the recorded actual value of the scrubber pressure drop or water flow rate is less than the minimum operating limit established for the parameter during the compliance test. Any excursion would be a violation of the standard.

Other Control Devices. If an owner or operator elects to use a control device other than a baghouse or venturi wet scrubber to comply with a PM emission limit (e.g., an ESP), the proposed rule requires that the owner or operator monitor appropriate operating parameters for the control device. The rule would not specify the individual operating parameters to be monitored. Instead, each owner or operator would be required to select a set of operating parameters appropriate for the control device design that the owner or operator determines to be a representative and reliable indicator of the control device performance. During the initial performance test to demonstrate compliance with the applicable standard, the owner or operator would establish limiting values for selected operating parameters based on the actual values measured during this test. The rule would require that the owner or operator install, calibrate, operate, and maintain monitoring devices equipped with a recorder to measure and record at 15-minute or more frequent intervals the actual value for each operating parameter for which operating limits are established. The owner or operator would be required to regularly inspect the data recorded by the monitoring system at a sufficient frequency to ensure the control device is operating properly. An excursion occurs when the recorded actual value of a selected operating parameter is less than the minimum operating parameter limit (or, if applicable, greater than the maximum operating parameter limit) established for the parameter. When an excursion occurs, the owner or operator would be required to initiate the corrective action procedures identified in the startup, shutdown, and malfunction plan as necessary to restore the operation of the control device to the proper operating settings. Failure by the owner or operator to take the necessary corrective actions would be a violation of the standard.

G. Notification, Recordkeeping, and Reporting Requirements

The proposed rule requires the owner or operator to comply with the notification, recordkeeping, and reporting requirements in the general provisions in subpart A of 40 CFR part 63 with one exception. The notification, recordkeeping, and reporting requirements in the general provisions related directly to the visible emission limit compliance provisions specified in 40 CFR 63.6(h) would not apply to this rule.

1. Notifications

The owner or operator would be required to submit notifications described in the general provisions (40 CFR part 63, subpart A), which include initial notification of applicability, notifications of performance tests, and notification of compliance status.

2. Records

The owner or operator would be required to maintain records required by the general provisions and records needed to document compliance with the standard. For each control device used to comply with the rule, records would include copies of inspection records and a copy of the written maintenance plan.

The owner or operator would be required to retain all records for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The records for the most recent 2 years must be retained on site; records for the remaining 3 years may be retained off site but must still be readily available for review. The files could be retained on microfilm, microfiche, on a computer, or on computer or magnetic disks. The owner or operator could report required information on paper or a labeled computer disk using commonly available and compatible computer software.

3. Reports

As required by the general provisions, the owner or operator would be required to submit a report of performance test results; develop and implement a written startup, shutdown, and malfunction plan and report semi-annually any events where the plan was not followed; and submit semi-annual reports of any excursions when any monitored parameters fall outside the range of values established during the performance test.

VI. Impacts of Proposed Rule

A. Health Impacts

The Clean Air Act was created in part to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population. [See section 101(b)(1).] As previously explained, Congress specified in the 1990 Amendments that each standard for major sources require the maximum reduction in emissions of HAP that the EPA determines is achievable considering cost, health and environmental impacts, and energy impacts. In essence, these MACT standards would ensure that all major sources of air toxic emissions achieve the level of control already being achieved by the better controlled and lower emitting sources in each category. This approach provides assurance to citizens that each major source of toxic air pollution will be required to effectively control its emissions. At the same time, this approach provides a level playing field, ensuring that facilities that employ cleaner processes and good emissions control are not disadvantaged relative to competitors with poorer controls.

Emission data collected during development of the proposed NESHAP show that the pollutants that are listed in section 112(b)(1) and are emitted by primary copper smelters in the largest quantities are arsenic and lead compounds. Other HAP that are emitted in lesser quantities include antimony, beryllium, cadmium, chromium, cobalt, manganese, nickel, and selenium. These toxic metals can cause effects such as mucous membrane irritation (e.g., bronchitis, decreased lung capacity), gastrointestinal effects, nervous system disorders (from loss of function to tremor and numbness), skin irritation, and reproductive and developmental disorders. Chronic inhalation exposure to arsenic compounds is strongly associated with lung cancer; chronic oral exposure is linked to skin, bladder, liver, and lung cancer. Additionally, several of the metals accumulate in the environment and the human body. Cadmium, for example, is a cumulative pollutant, which can cause kidney effects after the cessation of exposure. Similarly, the onset of effects from beryllium exposure may be delayed 3 months to 15 years. Many of the metals also are known (arsenic, chromium VI, certain nickel compounds) or probable (cadmium, lead, and beryllium) human carcinogens.

In addition to HAP, the proposed rule would also reduce some of the pollutants whose emissions are controlled under the National Ambient Air Quality Standards (NAAQS). These pollutants include particulate matter and lead. The health effects of these pollutants are described in EPA's Criteria Documents, which support the NAAQS. Briefly, PM emissions have been associated with aggravation of existing respiratory and cardiovascular disease and increased risk of premature death. Depending on the degree of exposure, lead can cause subtle effects on behavior and cognition, increased blood pressure, reproductive effects, seizures, and even death. Children are particularly sensitive and exposure can also result in reduced growth. Lead compounds can be persistent in the environment and have the potential to accumulate in food chains.

The EPA does recognize that the degree of adverse effects to health can range from mild to severe. The extent and degree to which the health effects may be experienced is dependent upon: (1) the ambient concentrations observed in the area (e.g., as influenced by emission rates, meteorological conditions, and terrain), (2) the frequency and duration of exposures, (3) characteristics of exposed individuals (e.g., genetics, age, pre-existing health conditions, and lifestyle) which vary significantly with the population, and (4) pollution specific characteristics (e.g., toxicity, half-life in the environment, bioaccumulation, and persistence).

B. Air Quality Impacts

Nationwide HAP emissions from the ''Primary Copper Smelting'' source category are estimated to be approximately 189 Mg/yr (208 tpy). The EPA estimates that implementation of the NESHAP, as proposed, would reduce these nationwide HAP emissions by approximately 20 percent to 155 Mg/yr (171 tpy).

C. Other Environmental and Energy Impacts

Other environmental and energy impacts associated with implementing the requirements of the proposed rule primarily are expected to result from the operation of the capture systems and the PM control devices. No significant adverse water, solid waste, or energy impacts are expected as a result of the proposed rule.

Direct water quality impacts from the proposed rule would vary depending on the type of control devices that the smelter owners and operators choose to use to comply with the proposed particulate matter emission limits. No direct water quality impacts would result from operation of either a baghouse or electrostatic precipitators. If wet scrubbers are used to control PM emissions, wastewater from the scrubber blowdown would be generated. The EPA expects wet scrubbers to be used only in limited applications to comply with the rule (the most likely use of existing wet scrubbers is to meet the standards for slag cleaning vessels).

The dust collected in baghouses and electrostatic precipitators and the sludge generated by wet scrubbers would be potential sources of solid waste. At existing primary copper smelters, the common operating practice is to recycle the dust collected by the baghouses and electrostatic precipitators by feeding the material back to the flash smelting furnace and not dispose of this material as a solid waste.

Energy impacts would result from the increased consumption of electricity required at a primary copper smelter to operate any additional capture systems and control devices installed to meet the proposed rule requirements. Electricity is required to charge the collector plates in electrostatic precipitators. Electric motor-driven fans, blowers, or pumps, (depending on the type of control equipment) are used for operations such as moving the captured gas stream to the control device, operating baghouses, and circulating water through a wet scrubber.

D. Economic Impacts

The cost impacts of the proposed NESHAP are expected to result mainly from costs that some primary copper smelters may incur to replace or upgrade their existing copper converter secondary capture systems (e.g., install a new secondary hood design or increase the system draft by installing a larger fan) and costs for monitoring, recording, and recordkeeping. The EPA estimated the cost to owners and operators of implementing the requirements of the proposed rule at the smelter sites that the EPA expects are likely to be subject to the rule. The total nationwide capital investment cost to purchase and install the air emission controls that would be required by the rule is estimated by the EPA to be approximately $6 million. The total nationwide annual cost would be approximately $2.2 million per year.

Emission control costs as a percentage of sales revenues were estimated to evaluate the impact of the regulation on the primary copper smelting industry and affected individual facilities. Economic impacts are expected to be minimal. The annualized costs of the regulation represents approximately 0.07 percent of 1996 sales revenues for the industry. Individual copper smelting facilities are expected to experience emission control costs as a percent of sales ranging from 0.01 to 0.44 percent.

VII. Rationale for Selection of Proposed Standards

A. Selection of Pollutants

For the proposed NESHAP, the EPA decided that it is not practical to establish individual standards for each specific type of metallic HAP the could be present in a copper ore (e.g., separate standards for arsenic emissions, separate standards for lead emissions, and so forth for each of the metals listed as HAP and potentially could be present in the copper ore). When released into the air during the primary copper smelting operations, each of the metallic HAP compounds behaves as particulate matter. Therefore, the EPA decided to establish standards for total particulate matter as a surrogate pollutant for the individual types of metallic HAP emitted from primary copper smelters.

The type and concentration of the metallic HAP compounds contained in the copper ore concentrate shipped to a primary copper smelter is not constant but instead varies over time. The concentrations of each type of metallic HAP frequently vary throughout the copper ore deposit from which the copper concentrate is obtained. Establishing separate standards for each individual type of metallic HAP would impose costly and significantly more complex compliance and monitoring requirements on the primary copper smelter owners and operators and would achieve little, if any, more HAP emission reduction than would be achieved using the surrogate pollutant approach based on total particulate matter. On the other hand, strong correlations exist between air emissions of the selected surrogate pollutant and emissions of the individual metals it represents. The control technologies used for the control of PM emissions achieve equivalent levels of performance on metallic HAP emissions. Therefore, standards requiring good control of particulate matter will also achieve good control of the metallic HAP emitted from primary copper smelters.

B. Selection of Affected Sources

For the purpose of implementing a NESHAP, an *affected source* is defined to mean the stationary source, or portion of a stationary source that is regulated by a relevant standard or other requirement established under section 112 of the Act. Each relevant standard is to designate the ''affected source'' for the purpose of implementing that standard. Within a source category, the EPA decides which HAP emission sources (i.e., emission points or groupings of emission points) are most appropriate for establishing separate emission standards in the context of the Clean Air Act statutory requirements and the industry operating practices for the particular source category. The EPA selected the specific HAP emission sources requiring the development of air standards under this rulemaking based on consideration of test data and HAP emission estimates for these individual emission points.

The EPA reviewed available information regarding HAP emissions from anode copper fire refining operations. The information is insufficient to specifically quantify the level of HAP emissions from the anode furnaces and anode casting operations. However, at this stage of the copper production process, the residual content of metallic HAP in the blister copper is very low. Therefore, EPA decided not to propose specific emission standards for anode copper fire refining operations.

The EPA considered different approaches for designating the ''affected source'' for the selected emission point types ranging from using a broad definition (e.g., the entire smelter site) to narrow definitions (e.g., individual emission points). Designating the affected source for the NESHAP as the entire smelter site was dismissed by the EPA. This approach would require that the MACT floor be established by the total smelter-wide HAP emissions indicative of the level that is achieved by the best-performing five existing smelters. Application of a single MACT floor to combinations of different process and fugitive emission points at a primary copper site would be difficult.

A second approach is to designate an affected source by grouping the same or similar types of emission points together under a single affected source designation. The EPA decided that grouping similar emission points was the appropriate approach to use for two of primary copper smelter HAP emission sources selected to be controlled: batch copper converters and fugitive dust sources.

At each of the existing primary copper smelters, a row of three to five batch copper converters are used to produce blister copper. Off-gases captured from each of the individual converters during blowing are exhausted to the sulfuric acid plant through a common ventilation system used for the entire group of converters. At those smelters currently operating secondary capture devices (e.g., secondary hoods or air curtains) on each of the copper converters, the secondary captured gas streams are vented to a separate control device. Considering the smelter operating practices and existing air pollution control configurations used for copper converters, the EPA decided it is appropriate to designate the entire group of copper converters as the affected source.

Fugitive dust sources are those sources of PM emissions at the primary copper smelter resulting from the handling, storage, transfer, or other management of copper concentrate or other materials containing metallic HAP where the source is not associated with a specific process, process vent, or stack. The type and number of individual fugitive dust sources varies from smelter-to-smelter. Therefore, the EPA decided it is appropriate to designate the entire group of fugitive dust sources as the affected source.

The narrowest designation of affected source is by individual emission point. At each of the existing primary copper smelters only one copper concentrate dryer and one flash smelting furnace (or flash smelting furnace and slag cleaning vessel combination) is used at the smelter site. Each of these individual emission points would potentially emit significant quantities of HAP emissions if not controlled. Therefore, the EPA decided to designate each individual copper concentrate dryer, smelting furnace, and slag cleaning vessel as a separate affected source.

C. Selection of Basis and Level of the Proposed Standards

1. Background

The Clean Air Act statutory requirements for determination of the MACT floor are explained in section IV.C of this document. Determination of MACT floor for existing sources is dependent on the nationwide number of existing sources within the source category. The source category for which the EPA is developing this NESHAP is comprised of six existing primary copper smelters nationwide (discussed in Section III.A of this preamble). For a source category with less than 30 existing sources, the MACT floor is the average emission limitation achieved by the best performing five existing sources. The MACT floor for new sources is defined by the emission control that is achieved in practice by the best-controlled source.

For the other NESHAP developed by the EPA to date, the Agency has used several different approaches to determine MACT floor for individual source categories depending on the type, quality, and applicability of available data. These approaches include determining a MACT floor based on: (1) emission test data that characterize actual HAP emissions from presently controlled sources included in the source category; (2) existing federally-enforceable emission limitations specified in air regulations and facility air permits applicable to the individual sources comprising the source category; or (3) application of a specific type of air emission control technology currently being used by sources in the source category or by sources with similar pollutant stream characteristics. For the ‘‘Primary Copper Smelting’’ source category, the EPA decided to use the approach best suited for establishing the MACT floor on an individual affected source basis.

Once the MACT floors are determined for new and existing sources in a source category, the EPA must establish standards under a NESHAP that are no less stringent than the applicable MACT floors. The Administrator may promulgate standards that are more stringent than the MACT floor when such standards are determined by the EPA to be achievable taking into consideration the cost of implementing the standards as well as any non-air quality health and environmental impacts and energy requirements.

Section 112 of the Act requires that emission standards for control of HAP be established unless it is the Administrator's judgment that emission standards cannot be established or enforced for a particular type of source. In those cases when it is not possible to establish or enforce an emission standard, an alternative format must be used. Section 112(h)(2) of the Act identifies two conditions under which the Administrator may use an alternative format: (1) If the pollutants cannot be emitted through a conveyance designed and constructed to emit or capture the pollutant; or (2) if the application of measurement technology to a particular class of sources is not practicable because of technology and economic limitations. In these cases, the EPA may instead establish design, equipment, work practice, or operational standards, or a combination of these.

2. Selection of Standards for Copper Concentrate Dryers

Emissions of HAP from the copper concentrate dryer result from the entrainment of particulate matter containing metallic HAP in the exhaust gas stream from the dryer. At all six existing copper smelters, PM emissions from copper concentrate dryers are controlled by venting the dryer exhaust gases to either a baghouse or ESP. All six of the existing copper concentrate dryers have federally enforceable PM emission limits. Four of the dryers are subject to the NSPS PM emission limit of 50 mg/dscm (0.022 gr/dscf) (See § 60.162 in 40 CFR part 60, subpart P). The other two dryers are subject to a PM emission limit established in each smelter's respective State air permit. One dryer is subject to a State permit PM emission limit of 0.01 gr/dscf (approximately 23 mg/dscm). The second dryer is subject to a State permit PM emission limit of 0.03 gr/dscf limit (approximately 69 mg/dscm). The EPA also has obtained copies of the results for the compliance tests for each of these sources. Upon consideration of the information available to the EPA, the Agency elected to select the MACT floor for copper concentrate dryers based on the federally enforceable PM emission limits.

Using the federally-enforceable PM limits for the top five controlled sources, the average PM emission limit for existing copper concentrate dryers is 0.45 mg/dscm. The median limit for the five sources is the NSPS level of 0.50 mg/dscm. The average and median values are essentially the same and represent the control level established by the NSPS. Therefore, the EPA selected the NSPS PM emission limit of 50 mg/dscm as the MACT floor control level for existing copper concentrate dryers.

The EPA established a separate MACT floor control level for new sources based on the best-controlled copper concentrate dryer. As discussed above, the federally-enforceable PM emission limit for the best-controlled existing source is 0.01 gr/dscf. Converting this value to metric units, the MACT floor control level selected for new copper concentrate dryers is the PM emission limit of 23 mg/dscm.

The format of both the existing NSPS and State standards for copper concentrate dryers is a numerical emission limit using a mass concentration limit format. Consistent with the directives of section 112(h) of the Act, the EPA selected a mass concentration limit format for the proposed standards.

The MACT floor control level selected for existing copper concentrate dryers is 50 mg/dscm. The EPA considered establishing regulatory alternatives more stringent than the MACT floor control level based on the actual emissions recorded during compliance testing at each source. After review of the available test data for the controlled sources, the EPA concluded that these test data indicate actual PM emissions from each of the six controlled copper concentrates dryers effectively are at or near the control level established for the MACT floor. Therefore, EPA selected the MACT floor level of 50 mg/dscm as the proposed PM emission limit for an existing copper concentrate dryer.

The MACT floor control level selected for new copper concentrate dryers is the PM emission limit of 23 mg/dscm. The EPA did not identify any regulatory alternatives beyond the MACT floor for new sources. Therefore, the EPA selected the MACT floor of 23 mg/dscm (0.01 grain/dscf) as the level for the proposed standard for new copper concentrate dryers.

3. Selection of Standards for Smelting Furnaces

The smelting of copper concentrate in a furnace to obtain copper matte results in two types of HAP emissions. Process HAP emissions from the flash smelting furnace are metallic compound vapors in the off-gases exhausted from the furnace. Process fugitive HAP emissions result from hot metal vapors released when molten copper matter or slag is tapped from the furnace. Separate standards are proposed for smelting furnace process HAP emissions and for process fugitive HAP emissions.

Process HAP Emissions. All six of the existing smelters operate some type of flash smelting furnace. Process HAP emissions from these furnaces are controlled by exhausting the SO_2 rich off-gases to a by-product sulfuric acid plant. These controls have been installed to comply with requirements established to meet the National Ambient Air Quality Standards (NAAQS) for SO_2 and, in five of the six smelters, the primary copper smelter NSPS (40 CFR 60 subpart P). The smelting furnace at the Phelps Dodge Hidalgo smelter is not subject to this NSPS standard because it was built before the effective date of the standard. The NSPS limits SO_2 emissions from affected smelting furnaces to no more than 650 parts per million. All requirements under the NSPS as well as the applicable State Implementation Plans (SIP) are federally-enforceable.

While the by-product sulfuric acid plants were originally installed at the smelters for controlling SO_2 emissions, the inherent design and operating requirements of these plants also provide effective control of the metallic HAP contained in the smelting furnace off-gases. The sulfuric acid production process involves the catalytic conversion of the SO_2 contained in the off-gases to produce liquid sulfuric acid. To optimize the process performance and prevent expensive damage to the catalysts and other critical process equipment, the first step of the process requires that the smelting furnace off-gases be pre-cleaned and conditioned. Typically, these pre-cleaning and conditioning operations involve first passing the gas stream through an ESP (to remove particulate matter) and then a wet scrubber (to remove particulate matter further and to reduce the gas stream temperature). By using multiple control devices in series, very high overall particulate matter removal efficiencies are achieved such that effectively no particulate matter (and, therefore no metallic HAP) are emitted in the tail gas from the sulfuric acid plant.

Considering that all existing smelters use the same control technology for the smelting furnace off-gases, the EPA elected to select the MACT floor for smelting furnaces process HAP emissions based on application of a specific air emission control technology being used by the existing sources in the source category. The MACT floor control level selected for process HAP emissions from existing smelting furnaces is to vent the SO_2 rich off-gases from the smelting furnace to a by-product sulfuric acid plant or other type of sulfur recovery process unit that requires comparable levels of gas stream conditioning and pre-cleaning to remove particulate matter. Since all of the existing smelting furnaces represent the best-controlled source, the new source MACT floor is the same as the existing source MACT floor for smelting furnace process HAP emissions. Furthermore, the EPA did not identify any regulatory alternatives beyond the MACT floor. Therefore, the EPA selected the MACT floor as the basis for a proposed standard to control HAP emissions from smelting furnace off-gases at both new and existing sources.

To prescribe numerical emission limits for metals or particulate matter in the tail gases from the by-product sulfuric acid plants operated at primary copper smelters is very difficult because any actual emissions of metals or particulate matter from the by-product sulfuric acid plant, if present at all, are very variable and occur in trace amounts. Section 112 of the Act requires that an emission standard for control of HAP be established except in those cases when it is the Administrator's judgement that it is not feasible to prescribe or enforce an emission standard. In this case, it is neither feasible nor practical to prescribe or enforce a numerical emission limit for gases vented to a sulfuric acid plant due to technological and economic limitations. Because rigorous precleaning and conditioning of the smelting furnace off-gases is a necessary operating condition for the by-product sulfuric acid plant, venting to this unit ensures that emissions of metallic and particulate matter HAPs are either nonexistent or limited to trace amounts. In such a case, it is neither feasible nor practical to prescribe, measure, and enforce a numerical emission limit for the by-product sulfuric acid plant at these emission levels and, not only would such a standard be essentially unworkable from a technical standpoint, it would also provide virtually no benefit.

As an alternative to establishing a numerical emission limit, the EPA is proposing an equipment-based format for the standard. The proposed standard requires that the off-gases from the smelting furnace be vented to a by-product sulfuric acid plant or other type of sulfur recovery process unit that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter. The NSPS and SIP requirements for each smelter already provide for continuous emission monitoring of SO_2 emissions from these by-product sulfuric acid plants to assure compliance and proper operation of the plants. When indicated by the SO_2 emission monitoring, the smelter owners and operators are required to implement appropriate corrective actions as necessary to prevent degradation of the by-product sulfuric acid plant performance. The EPA believes that the mandatory gas stream pre-cleaning requirements imposed by this equipment standard together with the continuous SO_2 monitoring required by other federally-enforceable air rules assures that a consistently very high level of metallic HAP control is achieved for the off-gases exhausted from smelting furnaces without the need to establish a specific emission standard and perform emission testing to demonstrate compliance with the standard.

Fugitive Process HAP Emissions. At five of the six existing smelters, the hot metal vapors released during matte and slag tapping are captured using local hood ventilation systems. Because these emissions occur intermittently (only when matte or slag tapping is performed) and have relatively low SO_2 concentrations, the capture gas stream is not vented to the sulfuric acid plant but instead is vented to a separate baghouse or ESP. At the sixth smelter, the matte and slag tapping emissions are currently captured by a local ventilation hood system and vented to the smelter's main stack.

Not all of the controlled sources have federally enforceable PM emission limits. Four of the sources are subject to State air permit limits; however these PM emission limits vary in format and the type of particulate regulated, and therefore cannot be averaged together. The test data for these controlled sources are highly variable. The characteristics of the captured gas streams from smelting furnace matte and slag tapping operations are similar to the gas streams captured by Pierce-Smith converter secondary hood systems (e.g., same HAP constituents, similar particulate matter loadings, relatively low SO_2 concentrations, and emitted intermittently). Therefore, the EPA elected to establish the MACT floor for smelting furnace matte and slag tapping operations based on application of the control devices to a similar controlled source (i.e., lean SO_2 gas streams captured by Pierce-Smith copper converter secondary hood systems).

The MACT floor control level selected for control devices used to treat lean SO_2 gas streams from Pierce-Smith copper converters is a PM emission limit of 16 mg/dscm (the rationale for this level is described later in this section). Applying the same MACT floor to smelting furnaces, the MACT floor control level selected for smelting furnace process fugitive emission sources is a PM emission limit of 16 mg/dscm. No best-controlled smelting furnace could be identified by the EPA. Therefore, the new source MACT floor is the same as the existing source MACT floor.

The format selected for the standard is a numerical emission limit expressed as a mass concentration of particulate matter. The EPA did not identify any regulatory alternatives beyond the MACT floor for existing sources nor could the EPA identify a best-controlled source. Therefore, EPA selected the MACT floor of 16 mg/dscm as the level for the PM emission limit proposed for both existing and new smelting furnace matte and slag tapping operations.

4. Selection of Standards for Slag Cleaning Vessels

Two existing primary copper smelters operate a slag cleaning vessel in conjunction with the flash smelting furnace. At one of these smelters, the slag cleaning vessel currently is not being used as part of the smelting process, but representatives of the smelter have told the EPA that operation of this slag cleaning vessel may be resumed in the future.

Process HAP Emissions. The existing air emission control used for the slag cleaning vessels is to exhaust the off-gases from the slag cleaning vessel to a wet scrubber for control of sulfur oxide gases and particulate matter. One source is subject to a State air permit emission limit of 0.02 gr/dscf. The EPA's review of the available particulate matter emission test data for the wet scrubbers concluded that the data are limited, highly variable, and should not be used to characterize the actual emission levels for the purpose of establishing the MACT floor. The EPA elected to select the MACT floor for slag cleaning vessel exhaust gases based on the federally enforceable emission limit of 0.02 gr/dscf. Converting this value to metric units, the MACT floor control level selected for existing slag cleaning vessels is the PM emission limit of 46 mg/dscm.

The format selected for the standard is a numerical emission limit. The EPA did not identify any regulatory alternatives beyond the MACT floor for existing sources nor could the EPA identify a best-controlled source. Therefore, the EPA selected the MACT floor of 46 mg/dscm as the level for the PM emission limit proposed for the off-gases exhausted from existing and new slag cleaning vessels.

Process Fugitive HAP Emissions. Like smelting furnaces, process fugitive HAP emissions from slag cleaning vessels occur when molten copper matte or slag is tapped from the vessel. No data exists for these systems. At the one smelter currently operating a slag cleaning vessel, the hot metal vapors captured by the hood ventilation system over the slag cleaning vessel tapping ports are exhausted into the same control system used for the smelting furnace process fugitive emissions. Based on the application of air emission controls used by sources with similar pollutant stream characteristics, the MACT floor control level selected for slag cleaning vessel matte and slag tapping operations is the same PM emission limit of 16 mg/dscm established for smelting furnaces.

The format selected for the standard is a numerical emission limit. The EPA did not identify any regulatory alternatives beyond the MACT floor for existing sources nor could the EPA identify a best-controlled source. Therefore, EPA selected the MACT floor of 16 mg/dscm as the level for the PM emission limit proposed for both existing and new slag cleaning vessel matte and slag tapping operations. This is the same limit selected for control devices used to treat lean SO^2 gas streams from Pierce-Smith copper converters as described in the next section.

5. Selection of Standards for Batch Copper Converters

Selection of Regulatory Approach. Two different batch converter designs currently are used at primary copper smelters in the United States. The majority of the smelters use the Pierce-Smith converter design while one smelter uses the Hoboken converter design. These two designs differ significantly in the method used to capture the converter off-gases for air emission control. The side-flue design of the Hoboken converter evacuates the gases directly from the interior of the converter shell. In contrast, the design of the Pierce-Smith converter relies totally on the use of external hood systems positioned over the converter mouth to capture the gases after they have already exited the converter shell. These air emission capture methods are integrated into the overall design of each type of converter and are not interchangeable between the two designs (i.e., a Pierce-Smith converter cannot readily be retrofitted to use the Hoboken design). Thus, the EPA concluded that it is not appropriate to group the Hoboken converters with the Pierce-Smith converters for the purpose of establishing standards for existing batch copper converters. The EPA decided to develop separate standards for existing Pierce-Smith converters and for existing Hoboken converters.

Visual observations by EPA representatives of the converter capture systems in operation at each of the smelters suggests that the capture efficiency varies from smelter-to-smelter because different capture system designs and operating practices are used at individual smelters. No data are available to determine a specific capture efficiency for the capture systems used for either Pierce-Smith converters or Hoboken converters. In lieu of having specific capture efficiency values, the EPA believes that the opacity of the visible emissions exiting the converter building roof vents or exhaust fans directly over the converter aisle is a direct function of converter capture system performance when the converters are operating under certain specific conditions. Thus, the approach selected by the EPA for establishing a MACT floor for the converter capture system performance is to use opacity and converter operating data gathered at each of the smelters during a series of site visits conducted by the Agency.

Converter Visible Emission Observations. In April and May of 1997, the EPA conducted a series of visible emission observations at existing primary copper smelters in the United States operating Pierce-Smith converters or Hoboken converters. A summary of protocol used for the field observation data collection and analysis is presented below. More detailed information about the site visits, the opacity observations, and EPA's analysis of the data are available in Docket No. A–96–22.

Visible emission readings of the converter building at each of the smelter sites were made by teams of certified observers. At the three primary copper smelters located in Arizona, opacity observations were made by a team of EPA observers and a team of observers from the State of Arizona Department of Environmental Quality. The opacity observations for the two smelters located in New Mexico were made by a team of EPA observers.

All of the opacity observations were performed using procedures specified in Method 9 in 40 CFR part 60, appendix A. The observers recorded opacity readings at 15-second intervals for those sections of the converter building roof monitor (or in the case of one smelter, the converter building roof exhaust fan outlets) that are positioned directly over the location of the copper converters inside the building. When it was possible for an observer to see two or more plumes emitted from the converter building roof during the same reading interval, the observer identified the plume having the highest opacity and recorded an opacity reading for that plume.

Throughout the periods when outdoor opacity observations were being made by the observer teams, an EPA representative familiar with primary copper smelter operations was stationed inside the converter building and visually monitored the copper converter operations. This observer recorded on a clock time basis the times when a converter was in the blowing position and times when events occurred which generated visible plumes inside the building. Additional information about the converter operations was obtained from the smelter's computer records of the individual converter blowing rates.

In general, a sufficient number of opacity observations were obtained during the site visits to obtain a data base for each smelter consisting in the range of 400 to 500 minutes of opacity readings. Not included in the data base prepared for each smelter were any opacity readings made during periods when the converter operations were judged to not be representative of normal smelter operations (e.g., converter capture system malfunction) or when the opacity observation conditions did not meet Method 9 criteria (e.g., occurrence of high winds).

The analysis of the field data began by creating a spreadsheet data file for each smelter listing by the clock time at 1-minute intervals an average opacity value (based on the outside EPA and State observer opacity readings) and corresponding converter process information (based on the indoor process monitor log and records of the converter system blowing rates provided by the smelter operator). The 1-minute opacity value was calculated by averaging all of the 15-second readings made by the EPA and State observers during the clock time minute interval.

The EPA considered alternative approaches for determining an average opacity value for each smelter to represent the converter capture system performance. For each smelter data file, the EPA identified those clock minute intervals when one or more converters are operating in the blowing mode and none of the following ladle transfer operations were indicated in the file to be occurring in the converter aisle: charging of matte, reverts, or other materials to a converter; converter slag skimming from a converter; blister copper pouring from a converter; or slag return to the furnace. To account for the time delay between when visible emissions generated in the converter building are seen by the inside observer and when these impact the opacity recorded by the outside observers, the two minutes of opacity readings recorded immediately following the clock time recorded for cessation of the activity were assumed to be impacted by the visible emission event. The set of conditions when at least one of the converters is operating in the blowing mode and no visible emission events have occurred in the converter aisle during the preceding two minutes is referred to as "blowing without interferences". The EPA then calculated the average opacity value for each period consisting of 6 consecutive minutes during which "blowing without interferences" occurred.

Existing Pierce-Smith Copper Converters. Five existing primary copper smelters use Pierce-Smith converters. At each smelter, the air emissions from these copper converters during blowing are captured and controlled. The design and operation of the overall capture system used at each of these smelters to collect these emissions from Pierce-Smith converters varies from smelter-to-smelter. At every smelter, whenever each Pierce-Smith converter is positioned for blowing, the mouth of the converter is covered by a close-fitting primary hood. The gas stream captured by the primary hood is vented to the by-product sulfuric acid plant at the smelter. However, the primary hood does not completely seal the converter mouth since sufficient space must be provided to rotate the converter mouth out from under the hood during charging, skimming, and at other times.

To collect emissions that escape capture by the primary hoods, capture devices of various designs in addition to the primary hoods are used at each of the existing smelters (hereafter referred to collectively as the "converter secondary capture system"). At four of the smelters, the converter secondary capture system consists of a second set of mechanical hoods (hereafter referred to as the "secondary hoods") positioned above the primary hoods. The secondary hoods used at the individual smelters vary in design, capture effectiveness, and operating practices.

The fifth smelter controls air emissions from its Pierce-Smith converter operations using a secondary air curtain hood for each individual converter and also evacuates the entire converter building to a baghouse. This capture system design effectively provides 100 percent capture of all converter process fugitive emissions (as well as those process fugitive emissions and fugitive dust emissions from other sources located inside the converter building). The State air permit requirement for this capture system is to operate with no visible emissions.

The approach selected by the EPA for establishing the MACT floor for the overall Pierces-Smith converter capture system performance is to use opacity of the visible emissions from the converter building. The results for the EPA's field visible emission observations (described in the preceding section) were used to quantify the MACT floor control level. At the four smelters using primary hoods with secondary hoods to capture converter process fugitive emissions, the average converter building opacity observed at each of the individual smelters ranged from 0.7 percent to 7.1 percent. At the fifth smelter converter process fugitive emissions are controlled using secondary air curtain hoods in combination with a building evacuation system. Based on the State air permit requirement that the building evacuation system operate with no visible emissions, the EPA set the average converter building opacity for this smelter to be zero percent.

The arithmetic average of the opacity values for the five smelters operating Pierce-Smith converters is 2.8 percent. To establish the MACT floor, the EPA rounded this average opacity value to the nearest whole opacity value and selected 3 percent as the MACT floor converter capture system performance level for Pierce-Smith copper converters. The EPA did not identify any regulatory alternatives beyond the MACT floor for existing sources. Therefore, EPA selected the MACT floor of 3 percent as the level for the visible emission limit proposed for existing Pierce-Smith converters.

To establish the MACT floor for the level of control achieved for each of the captured converter gas streams, the EPA selected the approach of basing the MACT floor on application of the air emission control technology being used by the existing sources in the source category. Separate MACT floors were selected for the gas streams captured by the converter primary hoods and for the gas streams captured by the converter secondary capture system.

At each of the existing smelters, the SO_2 rich off-gases generated during converter blowing and captured by the primary hoods are blended with the off-gases from the smelting furnace and then vented to the smelter's by-product sulfuric acid plant. None of these converters is subject to the primary copper smelter NSPS (40 CFR 60 subpart P). Nonetheless, the control of the converter primary off-gases (i.e., SO_2 rich off-gases generated during converter blowing) is required under each smelter's SIP for attainment of the NAAQS for SO_2.

Given that the SO_2 rich off-gases exhausted from the Pierce-Smith converters and smelting furnace are treated by the same controls (i.e., the by-product sulfuric acid plant), it follows that the MACT floor for the converters should be the same as the MACT selected for the smelting furnace off-gases. As presented in section VII.C.3 of this preamble, the standard that the EPA selected for smelting furnaces is to vent the furnace off-gases to a by-product sulfuric acid plant (or other type of sulfur recovery process unit that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter). Therefore, the EPA selected the same MACT floor and standard for gas streams captured by the Pierce-Smith converter primary hoods.

The low SO_2 concentrations of gas streams captured by the Pierce-Smith converter secondary capture systems are not suitable for venting to the by-product sulfuric acid plant. Instead, PM emissions from the gas streams captured by the Pierce-Smith converter secondary capture systems (hereafter referred to as ''converter secondary emissions'') are controlled at each of the existing smelters by venting the gas streams to a separate control device. At four of the smelters operating Pierce-Smith copper converters, the converter secondary capture system is vented to a baghouse. At the fifth smelter, the converter secondary capture system is vented to an ESP.

Considering that four of the five existing smelters use the same control technology for the Pierce-Smith converter secondary emissions, the MACT floor control level selected for Pierce-Smith converter secondary emissions is to vent the captured gas streams to a baghouse (or other type particulate matter control device that achieves a comparable level of control for particulate matter emissions). Since this control technology also represents the best-controlled source, the new source MACT floor is the same as the existing source MACT floor for Pierce-Smith converter secondary emissions.

The EPA did not identify any regulatory alternatives beyond the MACT floor for control of gas streams captured by the converter secondary capture systems. Therefore, the EPA selected the application of baghouses as the basis for the proposed standards to control converter secondary emissions. Consistent with other standards the EPA has promulgated based on application of baghouses for control of PM emissions, the EPA selected the format of the standard to be a numerical emission limit expressed using a mass concentration.

The EPA used available test data to select a value for the numerical emission limit for Pierce-Smith converter secondary emissions. Particulate matter emission test data are available for each of the existing baghouses used to control Pierce-Smith converter secondary emissions. A data set consisting of results for three individual source test runs are available for each of the four baghouses. The results for these individual test runs show baghouse outlet PM concentrations range from approximately 0.002 gr/dscf to 0.01 gr/dscf. Averaging the results of the three individual runs for each baghouse shows that comparable levels of particulate matter emission control are achieved by all of the baghouses (the average baghouse outlet PM concentrations ranging from approximately 0.004 gr/dscf to 0.007 gr/dscf). Test results for a three-run source test are also available for the single ESP used to control Pierce-Smith converter secondary emissions. The ESP outlet PM concentrations measured by the three individual test runs range from approximately 0.002 gr/dscf to 0.004 gr/dscf. The data show that the ESP achieved a level of PM emission control similar to that demonstrated by the baghouses.

All of the control devices were operating properly when the source tests were conducted. Considering that the gas stream flow rates and inlet particulate matter concentrations varied between the individual control devices, the EPA cannot distinguish any real differences between the control levels measured for the control devices used to control Pierce-Smith converter secondary emissions. Therefore, for the numerical emission limit, the EPA selected the value at the upper end of the range of the average outlet PM concentrations in the data set (0.007 gr/dscf). It is the EPA's judgement that a control device outlet PM concentration of 0.007 gr/dscf best characterizes the level of actual emissions that can reasonably be expected to be consistently achieved by all well-controlled sources. Converting this value to metric units, the proposed standard for both existing and new sources selected for Pierce-Smith converter secondary emissions is the PM emission limit of 16 mg/dscm.

Existing Hoboken Copper Converters. One existing copper smelter uses Hoboken converters. The off-gases from these copper converters during blowing are evacuated through the side-flue and vented to the sulfuric acid plant at the smelter. At this smelter, the average converter building opacity value observed by the EPA was 3.8 percent. The MACT floor converter capture system performance level selected for

Hoboken copper converters is an average opacity value of 3.8 percent as measured at the converter building roof monitor using the test protocol developed by the EPA for this rulemaking. To be consistent with the method used to select the MACT floor for Pierce-Smith converters, the EPA rounded this average opacity value to the nearest whole opacity value and selected 4 percent as the MACT floor converter capture system performance level for Hoboken copper converters. The EPA did not identify any regulatory alternatives beyond the MACT floor for existing sources. Therefore, EPA selected the MACT floor of 4 percent as the level for the visible emission limit proposed for existing Hoboken converters.

Like the Pierce-Smith converters, the SO_2 rich off-gases exhausted from the Hoboken converters during converter blowing is blended with the off-gases stream from the smelting furnace and vented to the by-product sulfuric acid plant. For consistency with the Pierce-Smith converter standards, the EPA established the proposed standard for existing Hoboken converters to be that the SO_2 rich off-gases directly evacuated from the converters be vented to a by-product sulfuric acid plant or other type of sulfur recovery process unit that requires comparable levels of gas stream conditioning and pre-cleaning to remove particulate matter.

New Copper Converters. The EPA established a separate standard for new batch copper converters based on the best-controlled source. This source is the smelter that controls air emissions from the copper converter operations using secondary air curtain hoods and evacuation of the entire converter building to a baghouse. This capture system design effectively provides 100 percent capture of all converter emissions. The federally-enforceable opacity limit for the converter building at this smelter is no visible emissions. Although this capture system presently is used at a smelter operating Pierce-Smith converters, the capture system design is equally applicable to a smelter operating Hoboken converters. Therefore, the MACT floor capture system performance selected for any new batch copper converter, regardless of design, is to operate with sufficient ventilation draft whenever molten material is in the copper converter such that no visible emissions exit the building housing the copper converters.

For the captured gas streams, the control levels achieved by the best-controlled source are the same as the standards established for existing converters. Thus, the standard the EPA selected for new converters is to vent the SO_2 rich off-gases from the converter generated during blowing to a by-product sulfuric acid plant or other type of sulfur recovery process unit that requires comparable levels of gas stream conditioning and pre-cleaning to remove particulate matter. The EPA selected 16 mg/dscm to establish the proposed PM emission limit for the converter gases not controlled by venting to the sulfuric acid plant.

6. Selection of Standards for Fugitive Dust Sources

Fugitive dust emissions at existing primary copper smelters are controlled by using a variety of different methods. Not all smelters control the same sources nor use the same type of control. The fugitive dust control measures used at a given smelter varies depending on the dust controls required by the facility's State air permit and the facility owner's preferences and polices regarding fugitive dust control. These controls can range from daily water spraying of plant roads and outdoor storage piles to enclosure and venting of the source to a control device. No specific group of fugitive dust control measures could be identified that reflected an average emission limitation for the existing smelters. The EPA decided that MACT floor for fugitive dust sources is to develop and implement a site-specific set of fugitive dust control measures to be implemented by the smelter owner or operator according to a written plan. No best-controlled fugitive dust sources could be identified by the EPA. Therefore, the new source MACT floor is the same as the existing source MACT floor for fugitive dust sources.

Establishing and enforcing emission limitations for fugitive dust sources is not practical. The inherent mechanisms by which pollutants are emitted from fugitive dust sources prevents the application of batch stack sampling methods to measure the level of the emissions from these sources. It is not feasible to capture the emissions and subsequently discharge these emissions through a duct or other conveyance to a control device. Therefore, as allowed under section 112(h) of the Act, the EPA decided to use a work practice format for the proposed standards for fugitive sources.

The proposed standards would require the smelter owner or operator to implement appropriate work practice control measures specific to the types of fugitive dust sources at a smelter site. For many fugitive dust sources there are several equivalent control measures available for controlling fugitive dust emissions from a particular type of source. Therefore, the standard for each affected owner or operator to develop and implement a site-specific fugitive dust control plan is being proposed rather than the EPA establishing the specific individual work practices that all smelter owners and operators must use. The EPA believes that flexibility provided to the smelter owner and operator by the site-specific approach is needed because the best fugitive dust control options for a given smelter are determined by the physical layout of the smelter, the types of fugitive dust sources, and the control measures that are already being implemented. These factors vary significantly from smelter to smelter.

D. Selection of Compliance Requirements

1. Selection of Compliance Dates

Section 112(i)(3) of the Act requires the Administrator to establish a compliance date or dates for each category or subcategory of existing sources which provides for compliance with the applicable standards as expeditiously as practicable but in no event later than 3 years after the effective date of the standards. To select the proposed compliance date for existing affected sources at primary copper smelters, the EPA considered the time that would be necessary for owners and operators of existing primary copper smelters to complete the tasks required to comply with the proposed rule.

At all of the existing smelters, air emission control equipment capable of meeting the applicable proposed standard is currently in place for many of the affected sources that would be subject to the rule. For a few existing affected sources, an upgrade of an existing capture system or installation of new control equipment may be needed. Owners and operators* will need to develop and implement the required operating plan for control of fugitive dust sources, and implement the required operating and monitoring requirements for the air emission control equipment used to comply with the standards. The EPA concluded that it is reasonable to expect that achieving compliance of existing affected sources with the requirements of the proposed rule can be completed within a period significantly shorter than 3 years. The EPA selected the compliance date for existing affected sources at primary copper smelters to be no later than 2 years after the effective date of the standards. The EPA believes it is realistic and practical to accomplish the tasks needed to comply with the proposed rule within 2 years, and this period fulfills the Clean Air Act directive that the Administrator establish a compliance date which provides for compliance with the applicable standards as expeditiously as practicable. Furthermore, should special circumstances arise at an individual smelter such that installation of controls which cannot be completed within the specified 2-year compliance period, section 63.6(i) of the NESHAP general provisions already provide for a compliance date extension (allowing up to 1 additional year for compliance) to be granted upon request of the owner or operator and approval by the Administrator or the delegated regulatory authority.

The compliance date for new affected sources was selected by the EPA to meet the requirements of section 112(i) of the Act. Owners or operators of new affected sources at primary copper smelters would be required to achieve compliance upon startup or the effective date of this NESHAP, whichever is later.

2. Selection of Test Methods

The proposed NESHAP would require the owner or operator to conduct an initial performance test to demonstrate compliance with each of the particulate matter emission limits specified in the rule that is applicable to a given smelter site. In addition, the rule would require that the owner or operator perform an initial performance test to determine the visible emissions from the building housing the copper converter department.

The EPA selected the performance test requirements to demonstrate compliance with the particulate matter emission limits based on the use of appropriate EPA reference test methods. Method 5 in appendix A to 40 CFR part 60 is an EPA reference test method that has been developed and validated for the measurement of PM emissions from stationary sources. Method 5D is a variation of Method 5 to be used for measuring PM emissions at the outlet to a positive pressure baghouse. For sampling and analysis of the gas stream the following EPA reference methods would be used with Method 5: Method 1 to select the sampling port location and the number of traverse points; Method 2 to measure the volumetric flow rate; Method 3 for gas analysis; and Method 4 to determine stack gas moisture.

As part of this rulemaking, the EPA is proposing a specific test protocol to be used for determining compliance with the visible emission limits established for existing Pierce-Smith and Hoboken copper converters. These standards establish average opacity limits for the visible emissions exiting the building roof monitors or exhaust fans directly above the copper converters. The test protocol includes making opacity readings using the Agency's EPA reference test method for the measurement of visible emissions from stationary sources (Method 9 in appendix A of 40 CFR part 60). This method is widely used in EPA air rules for determining compliance with visible emission limits. The EPA selected the procedures specified in the proposed test protocol based on the Agency's experience with the opacity observations performed during the smelter program the EPA conducted at existing primary copper smelters. A preliminary draft of the test protocol was reviewed by the State agencies and copper companies that participated in the field observation program. Based on comments received by the EPA from these reviewers, certain refinements to the opacity observation and data analysis procedures were incorporated into the test protocol included in the proposed NESHAP.

For determining compliance with the no visible emission limit proposed for new copper converters, the EPA selected Method 22, ''Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares,'' in appendix A of 40 CFR part 60. Method 22 requires only determination as to whether a visible emission occurs and does not require that the opacity of the emissions be determined. This method provides a simpler and less expensive method for determining compliance with a no visible emission limit than requiring new sources to use an appropriate version of the test protocol being proposed for existing sources. So that a performance test using Method 22 would represent a range of the different copper converter operations that typically occur inside the converter building during normal copper production, the EPA is proposing a minimum observation period of no less than 2 hours.

3. Selection of Monitoring Requirements

The EPA evaluates a hierarchy of options to select compliance assurance monitoring of HAP emissions from affected sources. This involved identifying and analyzing several different monitoring options for each of the affected sources and the proposed control equipment. This hierarchy includes measurement of the HAP or an appropriate surrogate pollutant by a continuous emission monitoring system (CEMS), installation of measurement devices for monitoring of process and/or control device operating parameters, and periodic or one-time performance tests. Each option is evaluated relative to its technical feasibility, cost, ease of implementation, and relevance to the process or air emission control equipment.

The use of a CEMS provides a direct measurement of the emissions from a given source. Monitors for measuring metallic HAP emissions are not commercially available. Monitors for measuring PM emissions as a surrogate for metallic HAP emissions have not yet been demonstrated for primary copper smelting operations. Therefore, the EPA did not consider further the use of CEMS for this proposed rule.

Another option for compliance assurance is monitoring appropriate process and/or control equipment operating parameters. Process parameters were not selected as indicators for metallic HAP emissions from the primary copper smelter sources because an adequate correlation does not exist between production or process parameters and emission rates. The EPA does believe that reasonable assurance of compliance with the standards proposed for this NESHAP can be achieved by the owner or through appropriate periodic inspection and continuous monitoring of the operation of the air emission control equipment that has been demonstrated by an initial performance test to achieve the applicable emission standards under the rule. Therefore, operating parameters were selected instead for the converter capture system and for control devices with one exception because measurements outside a range of values established during an initial performance test can be used to indicate the control device is not operating properly (i.e., not operating at the conditions under which compliance was demonstrated by performance testing).

A modified approach to monitoring control device operation parameters was selected for baghouses because the baghouse operating parameters routinely monitored do not correlate well with the particulate matter emission rates. The approach selected for baghouses uses a comprehensive, periodic inspection and maintenance program in combination with the use of bag leak detectors. The EPA has previously adopted this baghouse monitoring approach for similar types of metallurgical industry sources that use baghouses to control particulate matter emissions (e.g., secondary lead smelting

NESHAP under 40 CFR part 63, subpart X).

E. Selection of Notification, and Recordkeeping Reporting Requirements

Under section 114(a) of the Act, the EPA may require any owner or operator of a source subject to a NESHAP to establish and maintain records as well as prepare and submit notifications and reports to the EPA. The general recordkeeping, notification, and reporting requirements for NESHAP are specified in sections 63.9 and 63.10 of the NESHAP general provisions. The recordkeeping, notification, and reporting requirements for the proposed NESHAP were selected to be consistent with the general provisions requirements.

VIII. Public Participation

The EPA seeks full public participation in arriving at its final decisions, and strongly encourages comments on all aspects of this proposal from all interested parties. Full supporting data and detailed analyses should be submitted with comments to allow the EPA to make maximum use of the comments. All comments should be directed to the Air and Radiation Docket and Information Center, Docket No. A–96–22 (see **ADDRESSES**). Comments on this notice must be submitted on or before the date specified in **DATES**.

Commenters wishing to submit proprietary information for consideration should clearly distinguish such information from other comments, and clearly label it ''Confidential Business Information'' (CBI). Submissions containing such proprietary information should be sent directly to the following address, and not to the public docket, to ensure that proprietary information is not inadvertently placed in the docket: Attention: Mr. Gene Crumpler, c/o Ms. Melva Toomer, U.S. EPA Confidential Business Information Manager, OAQPS (MD–13), Research Triangle Park, NC 27711. Information covered by such a claim of confidentiality will be disclosed by the EPA only to the extent allowed and by the procedures set forth in 40 CFR part 2. If no claim of confidentiality accompanies the submission when it is received by the EPA, the submission may be made available to the public without further notice to the commenter.

IX. Administrative Requirements

A. Docket

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

B. Public Hearing

If a request to speak at a public hearing is received, a public hearing on the proposed standards will be held according to section 307(d)(5) of the Act. Persons wishing to present oral testimony or to inquire as to whether a hearing is to be held should contact the EPA (see **FOR FURTHER INFORMATION CONTACT**). To provide an opportunity for all who may wish to speak, oral presentations will be limited to 15 minutes each.

Any member of the public may file a written statement on or before June 19, 1998. Written statements should be addressed to the Air and Radiation Docket and Information Center (see **ADDRESSES**) and refer to Docket No. A–95–43. A verbatim transcript of the hearing and written statements will be placed in the docket and be available for public inspection and copying, or mailed upon request, at the Air and Radiation Docket and Information Center.

C. ''Significant Regulatory Action'' Determination Under Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether the regulatory action is ''significant'' and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Executive Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Under the terms of Executive Order 12866, it has been determined that this regulatory action is not significant because none of the listed criteria apply to this action. Consequently, this action was not submitted to OMB for review under Executive Order 12866.

D. Enhancing the Intergovernmental Partnership Under Executive Order 12875

In compliance with Executive Order 12875, the EPA involved State regulatory experts in the development of this proposed rule. No tribal governments are believed to be affected by this proposed rule. Although not directly impacted by the rule, State governments will be required to implement the rule by incorporating the rule into permits and enforcing the rule upon delegation. They will collect permit fees that will be used to offset the resources burden of implementing the rule. Comments have been solicited from State partners and have been carefully considered in the rule development process. In addition, all States are encouraged to comment on this proposed rule during the public comment period, and the EPA intends to fully consider these comments in the development of the final rule.

E. Clean Air Act

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

F. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the OMB under the requirements of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An information collection request (ICR) document has been prepared by EPA (ICR No. 1850.01), and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information

Division, U.S. Environmental Protection Agency (2137), 401 M Street SW., Washington, DC 20460, or by calling (202) 260–2740.

The proposed 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 owners or operators subject to national emission standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the Act (42 U.S.C. 7414). All information submitted to the EPA for which a claim of confidentiality is made is safeguarded according to Agency policy under 40 CFR part 2, subpart B. [See 41 FR 36902.]

The proposed rule would require maintenance inspections of the control devices but would not require any notifications or reports beyond those required by the general provisions. The proposed recordkeeping requirements require only the specific information needed to determine compliance.

The annual monitoring, reporting, and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the rule) is estimated to be 11,400 labor hours per year at a total annual cost of $560,500. This estimate includes a one-time performance test and report (with repeat tests where needed); one-time submission of a startup, shutdown, and malfunction plan with semi-annual reports for any event when the procedures in the plan were not followed; semi-annual excess emission reports; maintenance inspections; notifications; and recordkeeping. Total capital/startup costs associated with the monitoring requirements over the 3-year period of the ICR are estimated at $156,000, with operation and maintenance costs of $72,000/yr.

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 purpose 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 respond to a collection of information; search existing data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

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

Comments are requested on the EPA'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. Send comments on the ICR to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137), 401 M Street SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW., Washington, DC 20503, marked ''Attention: Desk Office for EPA.'' Include the ICR number in any correspondence. Because the OMB is required to make a decision concerning the ICR between 30 and 60 days after April 20, 1998, comment to OMB is best assured of having its full effect if OMB receives it by May 20, 1998. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

G. Pollution Prevention Act

The Pollution Prevention Act of 1990 (42 U.S.C. 13101 *et seq.*, Pub. L. 101–508, November 5, 1990) establishes the national policy of the United States for pollution prevention. This act declares that: (1) pollution should be prevented or reduced whenever feasible; (2) pollution that cannot be prevented or reduced should be recycled or reused in an environmentally-safe manner wherever feasible; (3) pollution that cannot be recycled or reused should be treated; and (4) disposal or release into the atmosphere should be chosen only if none of the other options is available.

The HAP emitted during the copper smelting process result from metallic compound impurities that occur naturally in copper ore deposits. The House Conference Report on the 1990 Amendments specifically prevents the Administrator from considering the substitution of, or other changes in, metal or mineral bearing raw material used as feedstocks in establishing emission standards, work practice standards, operating standards, or other prohibitions for nonferrous metals source categories. Thus, no restrictions can be placed by the EPA on the HAP content of the copper ore shipped to primary copper smelters. Furthermore, there are no commercial-scale pretreatment processes available for removing or reducing the metallic HAP contained in the copper concentrate before feeding the material to the flash smelting furnace.

Opportunities for applying pollution prevention to the ''Primary Copper Smelting'' source category are basically limited to application of air emission controls to reduce the release of metallic HAP from the copper smelting process into the atmosphere. Particulate matter collected by baghouses or ESP's used to control the HAP emissions from the smelting processes can be recycled back through the flash smelting furnace for recovery of the residual copper contained in this material. Thus, to the extent possible, pollution prevention has been considered in the development of this rulemaking, and the NESHAP is consistent with the Pollution Prevention Act.

H. Regulatory Flexibility

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements 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 not-for-profit enterprises, and small government jurisdictions.

The impact of the regulation on small entities was evaluated in the economic impact analysis. Companies engaged in primary copper smelting with less that 1,000 employees are classified as small businesses by the Small Business Administration. Based on the analysis conducted, none of the companies owning the six primary copper smelters potentially affected by this rulemaking are small entities. Under section 605(b) of the Regulatory Flexibility Act, the Administrator certifies that this rule will not have a significant economic impact on small entities.

I. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 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, the 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 by State, local, and tribal governments, in aggregate, or by the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires the 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 the 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 of why that alternative was not adopted. Before the 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 this rule does 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 one year. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, the EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments because it contains no requirements that apply to such governments or impose obligations upon them. Therefore, today's rule is not subject to the requirements of section 203 of the UMRA.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Primary copper smelter, Reporting and recordkeeping requirements.

Dated: April 9, 1998.

Carol M. Browner,

Administrator.

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

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

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

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

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

Subpart QQQ—National Emission Standards for Hazardous Air Pollutants From Primary Copper Smelters

Sec.

Subpart QQQ—National Emission Standards for Hazardous Air Pollutants From Primary Copper Smelters

§ 63.1440 Applicability.

(a) The requirements of this subpart apply to the owner or operator of a facility for which both of the following conditions apply:

(1) The facility produces anode copper by first flash smelting of copper ore concentrates to obtain molten copper matte and then converting the molten matte to blister copper using batch copper converters as defined in § 63.1441 of this subpart.

(2) The facility is a major source as defined in § 63.2 of this part.

(b) The affected sources at a primary copper smelter subject to this subpart are the sources listed in paragraphs (b)(1) through (b)(5) of this section.

(1) *Copper concentrate dryers.* The affected source is each individual copper concentrate dryer as defined in § 63.1441 of this subpart.

(2) *Smelting vessels.* The affected source is each individual smelting vessel as defined in § 63.1441 of this subpart.

(3) *Slag cleaning vessels.* The affected source is each individual slag cleaning vessel as defined in § 63.1441 of this subpart.

(4) *Batch copper converters.* The affected source is the copper converter department as defined in § 63.1441 of this subpart.

(5) *Fugitive dust sources.* The affected source is the entire group of all fugitive dust sources, as defined in § 63.1441 of this subpart, that are located at a primary copper smelter.

(c) A new affected source is an affected source for which construction or reconstruction commences on or after April 20, 1998. New affected sources are subject to the relevant standards for new sources specified in this subpart.

(d) The requirements of the general provisions in subpart A of this part that apply and those that do not apply to owners and operators subject to this subpart are specified in appendix A to this subpart.

§ 63.1441 Definitions.

All terms used in this subpart shall have the meaning given to them in this section, § 63.2 of this part, or the Act.

Baghouse means a control device that collects particulate matter by filtering the gas stream through bags. A *baghouse* is also referred to as a ''fabric filter.''

Bag leak detection system means an instrument that can monitor particulate matter (e.g., dust) loadings in the exhaust of a baghouse to detect bag failures. A *bag leak detection system* includes, but is not limited to, an instrument that operates on triboelectric, light scattering, transmittance or other effect to monitor relative particulate matter loadings.

Batch copper converter means a copper converter that is one of the following copper converter designs: a Pierce-Smith converter; a Hoboken converter; or a similar design copper converter that produces blister copper in discrete batches using a sequence of charging, blowing, skimming, and pouring steps. A *batch copper converter* does not use continuous flash converting technology.

Blowing means the copper converter operating mode during which air or oxygen-enriched air is injected into the molten converter bath.

By-product sulfuric acid plant means a facility that produces sulfuric acid by a contact process involving the catalytic conversion of sulfur dioxide to sulfur trioxide followed by absorption of the sulfur trioxide in a sulfuric acid solution.

Capture system means the collection of components used to capture gases and fumes released from one or more emission points, and then convey the captured gas stream to a control device. A *capture system* may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, manifolds, plenums, and fans.

Charging means the copper converter operating mode during which molten or solid material is added to a copper converter.

Control device means the air pollution control equipment used to collect particulate matter emissions. Examples of such equipment include, but are not limited, to a baghouse, an electrostatic precipitator, and a wet scrubber.

Copper concentrate dryer means a vessel in which copper concentrates are heated in the presence of air to reduce the moisture content of the material. Supplemental copper-bearing feed materials and fluxes may be added or mixed with the copper concentrates fed to a *copper concentrate dryer.*

Copper converter means a vessel in which copper matte or other copper-bearing material is oxidized to form blister copper.

Copper converter department means the area at a primary copper smelter in which operations are conducted to oxidize copper matte or other copper-bearing material to form blister copper. The *copper converter department* includes the batch copper converters and the associated capture systems used to collect gases and fumes emitted during copper converter operations (e.g., primary hood ventilation system, secondary hood ventilation system).

Copper matte means a material predominately composed of copper and iron sulfides produced by smelting copper ore concentrates.

Fugitive dust material means copper concentrate, dross, reverts, slag, speiss, or other solid copper-bearing materials.

Fugitive dust source means a stationary source of particulate matter emissions resulting from the handling, storage, transfer, or other management of fugitive dust materials where the source is not associated with a specific process, process vent, or stack. Examples of *fugitive dust sources* include, but are not limited to, plant roadways used by vehicles transporting copper concentrate, outdoor copper concentrate storage piles, bedding areas, and conveyor system transfer points.

Holding means the copper converter operating mode during which the molten bath is maintained in the copper converter but does not include periods of blowing or periods when material is being added or removed from the copper converter.

Opacity means the degree to which emissions reduce the transmission of light.

Operating parameter monitoring system means the total equipment that may be required to meet the data acquisition and availability requirements of this subpart used to sample, condition (if applicable), analyze, and provide a record of capture system or control device operating parameters.

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the specific reference method.

Pouring means the copper converter operating mode during which molten copper is removed from the molten converter bath.

Primary copper smelter means a facility that produces anode copper by first flash smelting of copper ore concentrates to obtain molten copper matte and then converting the molten matte to blister copper using batch copper converters. Primary copper smelting includes the handling and blending of copper concentrate, the drying of copper concentrate, the flash smelting of copper concentrate to matte-grade copper, the conversion of matte-grade copper to blister-grade copper in a batch copper converter, the refining of blister-grade copper to anode-grade copper, and the casting of copper anodes.

Skimming means the copper converter operating mode during which molten slag is removed from the molten converter bath.

Slag cleaning vessel means a vessel that receives molten copper-bearing material and the predominant use of the vessel is to separate this material into molten copper matte and slag layers.

Smelting vessel means a furnace, reactor, or other type of vessel in which copper ore concentrate and fluxes are melted to form a molten mass of material containing copper matte and slag. Other copper-bearing materials may also be charged to the smelting vessel.

§ 63.1442 [Reserved].

§ 63.1443 Standards: Copper concentrate dryers.

(a) The requirements of this section apply to affected copper concentrate dryers at a primary copper smelter subject to this subpart. Standards for existing copper concentrate dryers are specified in paragraph (b) of this section. Standards for new copper concentrate dryers are specified in paragraph (c) of this section.

(b) The owner or operator shall not discharge nor cause to be discharged to the atmosphere from the exhaust vent for an existing copper concentrate dryer any gases that contain particulate matter greater than 50 milligrams per dry standard cubic meter (mg/dscm) as determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

(c) The owner or operator shall not discharge nor cause to be discharged to the atmosphere from the exhaust vent for a new copper concentrate dryer any gases that contain particulate matter greater than 23 mg/dscm as determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

§ 63.1444 Standards: Smelting vessels.

(a) The requirements of this section apply to affected existing and new smelting vessels at a primary copper smelter subject to this subpart.

(b) The owner or operator shall discharge the off-gases exhausted from the smelting vessel to a by-product sulfuric acid plant or another type of sulfur recovery process that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter. A performance test is not required for gas streams that meet the requirements of this paragraph.

(c) The owner or operator shall capture and control air emissions when tapping molten material from the smelting vessel in accordance with the requirements of paragraphs (c)(1) and (c)(2) of this section.

(1) The owner or operator shall install and operate a capture system to collect gases and fumes released from each opening to the smelting vessel that is used to tap molten material from the vessel. The design and placement of this capture system shall be such that the tapping port opening, launder, and molten material receiving vessel are positioned within the confines or influence of the system's ventilation draft during all periods when molten material flows from the tapping port into the molten material receiving vessel.

(2) The owner or operator of each capture system operated to comply with paragraph (c)(1) of this section shall not discharge nor cause to be discharged to the atmosphere from the capture system exhaust outlet any gases that contain particulate matter greater than 16 mg/dscm as determined by a performance test conducted in accordance with the

applicable requirements of § 63.1451 of this subpart.

§ 63.1445 Standards: Slag cleaning vessels.

(a) The requirements of this section apply to affected existing and new slag cleaning vessels at a primary copper smelter subject to this subpart.

(b) The owner or operator shall discharge the off-gases exhausted from the slag cleaning vessel in accordance with the requirements of either paragraph (b)(1) or (b)(2) of this section.

(1) The owner or operator shall discharge the off-gases exhausted from the slag cleaning vessel to a by-product sulfuric acid plant or another type of sulfur recovery process that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter. A performance test is not required for gas streams that meet the requirements of this paragraph.

(2) The owner or operator shall not discharge nor cause to be discharged to the atmosphere from the slag cleaning vessel any off-gases that contain particulate matter greater than 46 mg/dscm as determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

(c) The owner or operator shall capture and control air emissions when tapping molten material from the slag cleaning vessel in accordance with the requirements of paragraphs (c)(1) and (c)(2) of this section.

(1) The owner or operator shall install and operate a capture system to collect gases and fumes released from each opening to the slag cleaning vessel that is used to tap molten material from the vessel. The design and placement of this capture system shall be such that the tapping port opening, launder, and molten material receiving vessel are positioned within the confines or influence of the system's ventilation draft during all periods when molten material flows from the tapping port into the molten material receiving vessel.

(2) The owner or operator of each capture system operated to comply with paragraph (c)(1) of this section shall not discharge nor cause to be discharged to the atmosphere from the capture system exhaust outlet any gases that contain particulate matter greater than 16 mg/dscm as determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

§ 63.1446 Standards: Copper converters.

(a) *Applicability.* The requirements of this section apply to the affected copper converter department at a primary copper smelter subject to this subpart. Standards for existing copper converter departments are specified in paragraph (b) of this section. Standards for new copper converter departments are specified in paragraph (c) of this section.

(b) *Standards for existing copper converter departments.* The owner or operator shall install, operate, and maintain air emission controls for each copper converter located in the copper converter department. As applicable to the copper converter design, the air emission controls shall meet the requirements in either paragraphs (b)(1), (b)(2), or (b)(3) of this section.

(1) *Existing Pierce-Smith copper converters.* Gases and fumes emitted when the Pierce-Smith converter is operating in a blowing mode shall be collected by a capture system and the captured gases and fumes vented to a control device in accordance with the requirements of paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(i) The capture system design shall include use of a primary hood that covers the entire mouth of the copper converter when the copper converter is positioned for blowing. Additional hoods (e.g., secondary hoods) or other capture devices shall be included in the capture system design as needed to achieve the operating requirements in paragraph (b)(1)(ii) of this section. The capture system design may use multiple intake and duct segments through which the ventilation rates are controlled independently of each other and individual duct segments may be connected to separate control devices.

(ii) The capture system shall be operated with sufficient ventilation draft such that the visible emissions exiting the roof monitors or roof exhaust fans on the building housing the copper converter department do not exhibit an average opacity greater than 3 percent as determined by a performance test conducted in accordance with the requirements of § 63.1451(c) of this subpart. This visible emission limit shall apply only during those periods when a performance test is conducted in conjunction with establishing the capture system operating parameter limits in accordance with the requirements in § 63.1452(c)(1) of this subpart. The requirements for compliance with opacity and visible emission limits specified in § 63.6(h) of the general provisions in subpart A of this part do not apply to this paragraph.

(iii) Each capture system exhaust stream shall be vented to one of the air emission controls specified in paragraph (b)(1)(iii)(A) or (b)(1)(iii)(B) of this section, as applicable considering the sulfur oxide concentration of the individual gas stream.

(A) A by-product sulfuric acid plant or another type of sulfur recovery process that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter. A performance test is not required for gas streams that meet the requirements of this paragraph.

(B) A control device which does not exhaust any gases to the atmosphere that contain particulate matter greater than 16 mg/dscm as determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

(2) *Existing Hoboken copper converters.* Gases and fumes released when the Hoboken converter is operating in a blowing mode shall be evacuated directly from the interior of the copper converter into a side flue intake positioned at one end of the converter vessel and these captured gases and fumes vented to a control device in accordance with the requirements of paragraphs (b)(2)(i) and (b)(2)(ii) of this section.

(i) The side flue intake of each Hoboken copper converter shall be operated with sufficient ventilation draft during blowing such that the visible emissions exiting the roof monitors on the building housing the copper converter department do not exhibit an average opacity greater than 4 percent as determined by performance tests conducted in accordance with the requirements of § 63.1451(c) of this subpart. This visible emission limit shall apply only during those periods when a performance test is conducted in conjunction with establishing the capture system operating parameter limits in accordance with the requirements in § 63.1452(c)(1) of this subpart. The requirements for compliance with opacity and visible emission limits specified in § 63.6(h) of the general provisions in subpart A of this part do not apply to this paragraph.

(ii) Each side flue exhaust stream shall be vented through a capture system to a by-product sulfuric acid plant or another type of sulfur recovery process that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter. A performance test is not required for gas streams that meet the requirements of this paragraph.

(3) *Other existing batch copper converters.* Gases and fumes released from a batch copper converter that is neither a Pierce-Smith copper converter nor a Hoboken copper converter shall be

controlled in accordance with the requirements in paragraphs (b)(1)(i) through (b)(1)(iii) of this section.

(c) *Standards for new copper converter departments.* The owner or operator shall install, operate, and maintain air emission controls for each copper converter located in the copper converter department. The air emission controls shall meet the requirements in paragraphs (c)(1) through (c)(3) of this section.

(1) Gases and fumes emitted whenever molten material is in the copper converter shall be collected by a capture system, and the captured gases and fumes shall be vented to a control device. The capture system design may use multiple intake and duct segments through which the ventilation rates are controlled independently of each other, and individual duct segments may be connected to separate control devices. (e.g., use of individual hoods on each copper converter in combination with a building evacuation system).

(2) The capture system shall be operated with sufficient ventilation draft whenever molten material is in the copper converter such that no visible emissions exit the the building housing the copper converter department as determined by performance tests conducted in accordance with the requirements of § 63.1451(d) of this subpart.

(3) Each capture system exhaust stream shall be vented to one of the air emission controls specified in paragraphs (c)(3)(i) or (c)(3)(ii) of this section, as applicable considering the sulfur oxide concentration of the individual gas stream.

(i) A by-product sulfuric acid plant or a another type of sulfur recovery process that requires comparable levels of gas stream pre-cleaning and conditioning to remove particulate matter. A performance test is not required for gas streams that meet the requirements of this paragraph.

(ii) A control device which does not exhaust any gases to the atmosphere that contain particulate matter greater than 16 mg/dscm as determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

§ 63.1447 [Reserved].

§ 63.1448 Standards: Fugitive dust sources.

(a) The requirements of this section apply to existing and new affected sources of fugitive dust emissions at a primary copper smelter subject to this subpart.

(b) The owner or operator shall prepare and implement a written fugitive dust control plan in accordance with the requirements specified in paragraphs (b)(1) through (b)(3) of this section.

(1) The fugitive dust control plan shall describe the specific control measures that are used to reduce emissions from the individual fugitive dust sources at the smelter site. Examples of control measures that may be used include, but are not limited to: installing an enclosure, installing and operating a local hood capture system vented to a control device, placing stockpiles below grade, installing wind screens or wind fences, using water sprays, applying appropriate dust suppression agents, or any combination of these control measures as appropriate for a given fugitive dust source.

(2) The fugitive dust control plan shall include a description of the control measures implemented for each of the fugitive dust sources listed in paragraphs (b)(2)(i) through (b)(2)(vi) of this section.

(i) Roads or other areas within the plant property boundary used by trucks or other motor vehicles (e.g., front-end loaders) transporting bulk quantities of fugitive dust materials. Paved roads and areas of the smelter site that are not used by these vehicles are not required to be included in the plan (e.g., employee and visitor parking lots);

(ii) Operations to unload fugitive dust materials from trucks or railcars;

(iii) Outdoor piles used to store fugitive dust materials;

(iv) Bedding areas used for blending copper concentrate and other feed constituents;

(v) Transfer points in conveying systems used to convey fugitive dust materials. These points include, but are not limited to, those points where the material is transferred from a conveyor belt to a second conveyor belt or discharged from a conveyor to a hopper or bin; and

(vi) Other fugitive dust sources at a smelter site as designated by the Administrator or delegated permitting authority.

(3) The owner or operator shall submit a copy of the fugitive dust control plan to the designated permitting authority on or before the applicable compliance date for the affected source as specified in § 63.1450(b) of this subpart. The requirement for the owner or operator to operate the smelter according to a written fugitive dust control plan shall be incorporated in the operating permit for the smelter site that is issued by the designated permitting authority under part 70 of this chapter.

§ 63.1449 Equivalent standard: combined exhaust gas streams.

(a) As an alternative to complying with the individual particulate matter emission limits specified in this subpart for affected sources, an owner or operator may elect to combine two or more of the affected exhaust gas streams listed in paragraphs (a)(1) through (a)(4) of this section and route the combined exhaust gas stream to a single control device that meets the equivalent particulate emission limit specified in paragraph (b) of this section.

(1) Exhaust gas stream from a copper concentrate dryer that would otherwise be subject to § 63.1443 of this subpart;

(2) Exhaust gas stream from a smelting vessel capture system that would otherwise be subject to § 63.1444(c)(2) of this subpart;

(3) Exhaust gas stream from a slag cleaning vessel capture system that would otherwise be subject to § 63.1445(c)(2) of this subpart; and

(4) Exhaust gas stream from a copper converter capture system that would otherwise be subject to §§ 63.1446(b)(1)(iii)(B) or (c)(3)(ii) of this subpart.

(b) An owner or operator shall not discharge nor cause to be discharged to the atmosphere a combined exhaust gas stream that contains particulate matter greater than the particulate matter emission limit calculated for the combined exhaust gas stream using the procedure specified in paragraphs (b)(1) and (b)(2) of this section. Particulate matter emissions in the combined exhaust gas stream shall be determined by a performance test conducted in accordance with the applicable requirements of § 63.1451 of this subpart.

(1) The particulate matter emission limit for the combined exhaust gas stream shall be calculated using Equation 1:

$$E = \frac{E_d Q_d + E_{sv} Q_{sv} + E_{scv} Q_{scv} + E_{cc} Q_{cc}}{Q_d + Q_{sv} + Q_{scv} + Q_{cc}} \qquad \text{(Eq. 1)}$$

Where:

E=Particulate matter emission limit for the combined exhaust gas stream (mg/dscm);

E_d=Particulate matter emission limit applicable to copper concentrate dryer as specified in § 63.1443 of this subpart (mg/dscm);

Q_d=Copper concentrate dryer exhaust gas stream volumetric flow rate as determined by the procedure specified in paragraph (b)(2) of this section (dscm);

E_{sv}=Particulate matter emission limit for smelting vessel capture system as specified in § 63.1444(c)(2) of this subpart (mg/dscm);

Q_{sv}= Smelting vessel capture system exhaust gas stream volumetric flow rate as determined by the procedure in paragraph (b)(2) of this section (dscm);

E_{scv}=Particulate matter emission limit for slag cleaning vessel capture system as specified in § 63.1445(c)(2) of this subpart (mg/dscm).

Q_{scv}=Slag cleaning vessel capture system exhaust gas stream volumetric flow rate as determined by the procedure specified in paragraph (b)(2) of this section (dscm);

E_{cc}=Particulate emission limit for copper converter capture system as specified in § 63.1446(b)(1)(iii)(B) or § 63.1446(c)(iii) of this subpart as applicable to the copper converter department (mg/dscm); and

Q_{cc}=Copper converter capture system exhaust gas stream volumetric flow rate as determined by the procedure specified in paragraph (b)(2) of this section (dscm).

(2) The volumetric flow rate of each individual exhaust gas stream used for the calculation specified in paragraph (b)(1) of this section shall be the average of the volumetric flow rates measured during each performance test run performed in accordance with the requirements of § 63.1451(b) of this subpart and used to determine compliance with the applicable particulate matter emission limits specified in §§ 63.1443 through 63.1446 of this subpart.

§ 63.1450 Compliance with standards and maintenance requirements.

(a) *General.* The requirements of this section apply to an owner or operator of an affected source required to comply with applicable standards under this subpart.

(b) *Compliance dates.* (1) The owner or operator of an affected source for which construction or reconstruction commences on or after April 20, 1998 shall achieve compliance with the applicable requirements of this subpart upon initial startup or [date of publication of the final rule in the **Federal Register**], whichever date is later.

(2) The owner or operator of an affected source that commenced construction or reconstruction before April 20, 1998 shall achieve compliance with the applicable requirements of this subpart as expeditiously as practical, but no later than [date 2 years after date of publication of final rule in the **Federal Register**].

(c) *Operation and maintenance requirements.* (1) At all times, including periods of startup, shutdown, and malfunction, the owner or operator shall operate and maintain each affected source, including associated air pollution control equipment, in accordance with the requirements of § 63.6 of the general provisions in subpart A of this part.

(2) The owner or operator shall develop and implement a written startup, shutdown, and malfunction plan in accordance with the requirements to § 63.6(e)(3) of the general provisions in subpart A of this part that describes the specific procedures to be followed for operating and maintaining each affected source and its associated air pollution control equipment during periods of startup, shutdown, and malfunction. In addition to the information required in § 63.6(e)(3) of this part, the information specified in paragraphs (c)(2)(i) through (c)(2)(iii) of this section shall be included in each plan.

(i) For the copper converter department capture system required by § 63.1446 of this subpart, a description of the corrective actions to be implemented by the owner or operator in the event that the operating parameter monitoring system measures a value for an operating parameter that exceeds the limit established for the parameter under § 63.1452(c)(1) of this subpart.

(ii) For each baghouse that is used to comply with a particulate matter emission limit under §§ 63.1442 through 63.1446 of this subpart, a standard operating procedures (SOP) manual that specifies, in detail, the procedures to be used by the owner or operator for inspection, maintenance, bag leak detection, and corrective action. The procedures specified in the SOP manual for inspections and routine maintenance of the baghouse shall, at a minimum, include the requirements in § 63.1452(d) of this subpart. The requirements of this paragraph do not apply to a baghouse used exclusively for the control of fugitive dust emissions in accordance with the requirements under § 63.1448 of this subpart.

(iii) For each control device other than a baghouse that is used to comply with a particulate matter emission limit under §§ 63.1442 through 63.1446 of this subpart, a description of the corrective actions to be implemented by the owner or operator in the event that the operating parameter monitoring system measures a value for an operating parameter that exceeds the limit established for the parameter under § 63.1452(e)(1) of this subpart.

§ 63.1451 Performance testing requirements.

(a) *General.* The requirements of this section apply to an owner or operator required to conduct performance tests to demonstrate compliance by an affected source with applicable emission limits under §§ 63.1442 through 63.1446 of this subpart.

(b) *Conduct of particulate matter emission limit performance tests.* The owner or operator shall conduct each performance test required under this subpart to determine compliance with the applicable particulate matter emission limits specified in §§ 63.1443 through 63.1446 of this subpart in accordance with applicable requirements in § 63.7 of the general provisions in subpart A of this part and shall use reference methods specified in paragraphs (b)(1) through (b)(5) of this section.

(1) Method 1 in appendix A of part 60 of this chapter shall be used to select the sampling port location and the number or traverse points;

(2) Method 2 in appendix A of part 60 of this chapter shall be used to measure the volumetric flow rate;

(3) Method 3 in appendix A of part 60 of this chapter shall be used for gas analysis;

(4) Method 4 in appendix A of part 60 of this chapter shall be used to determine stack gas moisture; and

(5) Method 5 in appendix A to part 60 of this chapter shall be used for measurement of particulate matter

emissions from sources other than positive pressure baghouses. Method 5D in appendix A of part 60 of this chapter shall be used for measurement of particulate matter emissions from positive pressure baghouses. The minimum sampling time for each run shall be 60 minutes and the minimum sampling volume for the run shall be 0.85 dscm. Three runs shall be performed and the average of the three runs shall be used to determine compliance.

(c) *Conduct of existing copper converter department visible emissions performance tests.* The owner or operator shall determine compliance of an existing copper converter department with the applicable visible emission limit specified in § 63.1446(b) of this subpart by using the procedure specified in paragraphs (c)(1) through (c)(7) of this section.

(1) *Test conditions.* The opacity observations shall be made during the period when the primary copper smelter is operating under conditions representative of the smelter's normal blister copper production rate. Before conducting the opacity observations, the owner or operator shall prepare a written test plan specifying the copper production conditions to be maintained throughout the opacity observation period. A copy of the test plan shall be submitted for review and approval by the Administrator or delegated authority. During the observation period, the owner or operator shall collect appropriate process information to prepare sufficient documentation to verify that all opacity observations were made during the conditions specified in the approved test plan.

(2) *Test notification.* The owner or operator shall notify the Administrator or delegated authority before conducting the opacity observations to allow the Administrator or delegated authority the opportunity to have authorized representatives attend the test. Written notification of the location and scheduled date for conducting the opacity observations shall be received by the Administrator on or before 30 calendar days before this scheduled date.

(3) *Opacity observation period.* The total time that opacity observations are made shall be of sufficient duration to obtain a minimum of 20 uninterrupted 6-minute intervals during which opacity readings in accordance with Method 9 in appendix A of part 60 of this chapter (i.e., 24 opacity readings, each reading made at a 15-second interval) are recorded for those conditions when at least one copper converter is operating in the blowing mode and no interferences occur as specified in paragraph (c)(6) of this section. The total observation period may be divided into two or more segments performed on different days if changes in outdoor conditions (e.g., position of sun relative to observers does meet the Method 9 criteria) or copper production conditions (e.g., equipment malfunction or process upset) prevent the required number of opacity readings from being obtained during one continuous period. If the total observation period is divided into two or more segments, all opacity observations shall be made during the same set of copper production conditions specified in the approved test plan.

(4) *Conduct of opacity observations.* All opacity observations shall be made using Method 9 in appendix A to part 60 of this chapter and the procedures specified in paragraphs (c)(4)(i) through (c)(4)(iv) of this section.

(i) The opacity observations shall be performed by a team of qualified visible emission observers. A sufficient number of observers shall be used to obtain two complete concurrent sets of 24 opacity readings for each of the required 6-minute observation intervals. All concurrent sets of 24 opacity readings need not be made by the same two observers; observer substitutions are allowed to provide observer rest breaks.

(ii) Each visible emission observer shall be certified as a qualified observer by the procedure specified in section 3 of Method 9 in appendix A of part 60 of this chapter. The owner or operator shall obtain proof of current visible emission reading certification for each observer.

(iii) Before beginning the opacity readings, all of the outdoor opacity observers shall identify and designate using a common identification code (e.g., consecutive numbers, alphabetic letters) each of the copper converter department visible emission points on the building for which opacity readings are to be made. The copper converter department visible emission points are those sections of the building roof monitor or those roof exhaust fan outlets that are positioned over the location of the copper converters inside the building.

(iv) Each observer shall take a position that meets the criteria specified in section 2.1 of Method 9 in appendix A of part 60 of this chapter and provides the observer with an unobstructed view of the designated converter department visible emission points. For each opacity reading, the observer shall record the identification code for the converter department visible emission point for which the reading was made. When during an individual opacity reading it is possible for an observer to distinguish two or more visible emission plumes from the designated converter department visible emission points, the observer shall identify, to the extent feasible, the plume having the highest opacity and record his or her opacity reading for that plume.

(5) *Process information gathering.* Throughout the opacity observation period, one or more persons familiar with the primary copper smelter operations shall be stationed inside the building housing the copper converters to visually monitor the copper converter operations. Each indoor process monitor shall record all observations in an operating log using the procedure specified in paragraphs (c)(5)(i) and (c)(5)(ii) of this section.

(i) Before beginning the opacity readings, the actions specified in paragraphs (c)(5)(i)(A) and (c)(5)(i)(B) of this section.

(A) An identification code (e.g., a number, a letter) shall be assigned to each copper converter in the copper converter department; and

(B) The clock time setting on the watch or clock to be used by the indoor process monitor shall be synchronized with the clock times settings for the timepieces to be used by the outdoor opacity observers.

(ii) During all periods when opacity readings are being made by the outdoor opacity observers, the indoor process monitor shall record in the operating log the information specified in paragraphs (c)(5)(ii)(A) and (c)(5)(ii)(B) of this section.

(A) When a copper converter is positioned in the blowing mode, the operating log entry for each activity shall include, but is not limited to, the following information:

(*1*) The copper converter identification code;

(*2*) The clock times for when blowing begins and when blowing ends; and

(*3*) The converter blowing rate. This information may be recorded by a separate computer data system.

(B) When an activity related to operating the copper converters or occurring in a converter aisle is observed by an indoor process monitor to generate visible emissions inside the building housing the copper converters, the operating log entry for each activity shall include, but is not limited to, the following information:

(*1*) A description of the activity;

(*2*) The clock times when the activity begins and when the activity ends; and

(*3*) If the activity pertains to a specific copper converter, the copper converter identification code.

(6) *Data reduction.* Using the information recorded in opacity field data sheets prepared by the outdoor opacity observers and the indoor process operating logs prepared by the indoor process monitor, data summary sheets for the entire observation period shall be prepared using the procedure specified in paragraphs (c)(6)(i) and (c)(6)(ii) of this section.

(i) Prepare data summary sheets for the entire observation period that lists by the clock time at 1-minute intervals the average of the opacity values read by the two observers during each 1-minute interval. [see Figure 1 of this subpart for an example of the format to use for the data summary sheets.] The average opacity value to be recorded on the data summary sheet for each 1-minute interval shall be calculated as an average of the eight 15-second interval readings recorded on the field data sheets by the two observers during a given clock time minute interval (add the four consecutive 15-second interval opacity readings made by Observer A during the specified clock time minute plus the four consecutive 15-second interval opacity readings made by Observer B during the same clock time minute, and divide this resulting total by eight).

(ii) Using the complete set of data summary sheets prepared in accordance with paragraph (c)(6)(i) of this section, identify on each data summary sheet those 1-minute intervals when one or more converters are operating in the blowing mode and no interferences occur. An ''interference'' is a period composed of consecutive clock time minutes during which one or more of the interference activities listed in paragraph (c)(6)(ii)(A) of this section occurs plus an appropriate time delay factor to account for the time lag between when the visible emissions generated by this activity are seen by the indoor process monitor and when these emissions impact the opacity recorded by the outdoor opacity observers. The time delay factor shall be determined on a site-specific basis as specified in paragraph (c)(6)(ii)(B) of this section.

(A) *Interference activities.* For the purpose of identifying ''interferences'', only the activities listed in paragraphs (c)(6)(ii)(A)(*1*) through (c)(6)(ii)(A)(*6*) of this section are considered to be interference activities. Other ancillary activities that are conducted in or adjacent to the copper converter aisle during the opacity observations that could potentially cause higher opacity readings from the designated converter department visible emission points are not considered to be interference activities (e.g., converter aisle cleaning, placement of smoking ladles or skulls on the copper converter aisle floor). The following activities are interference activities:

(*1*) Charging of copper matte, reverts, or other materials to a copper converter;

(*2*) Skimming slag or other molten materials from a copper converter;

(*3*) Pouring of blister copper or other molten materials from a copper converter;

(*4*) Return of slag or other molten materials to the flash smelting furnace or slag cleaning vessel;

(*5*) Roll-out or roll-in of the copper converter; or

(*6*) Presence of smoke or fumes generated in the smelting vessel, slag cleaning vessel, or anode refining areas that drifts into the copper converter department.

(B) *Time delay factor.* The interference period may be extended beyond the clock time recorded for cessation of the interference activity by adding a time delay factor. This time delay factor shall be a constant number of minutes not to exceed 5 minutes that is added to the clock time recorded when cessation of the interference activity occurs. The number of minutes to be used for the time delay factor shall be determined based on the information in the data file. An explanation of the rationale for selecting the value used for the time delay factor shall be prepared and included in the test report.

(7) *Calculation of average opacity for determination of compliance with opacity standard.* Compliance shall be determined using only those opacity readings listed in the complete set of data summary sheets prepared in accordance with paragraph (c)(6) of this section that are identified as occurring during a period when one or more converters are operating in the blowing mode with no interferences.

(i) Beginning at the first clock minute listed on the data summary sheets prepared in accordance with paragraph (c)(6) of this section, calculate 6-minute average opacity values for those periods composed of six consecutive minutes of blowing with no interferences. A minimum of 20 6-minute periods is required for the compliance calculation. If more than twenty 6-minute periods are included in the set of data summary sheets, then all of the 6-minute periods included in the set of data summary sheets shall be used for the compliance calculation.

(ii) Average opacity shall be calculated using Equation 2:

$$VE_{ave} = \frac{1}{n}\sum_{i=1}^{n} VE_i \qquad \text{(Eq. 2)}$$

where

VE_{ave}=Average opacity to be used for compliance determination (percent);

n=Number of 6-minute opacity averages in the data set (at least 20);

i=Period ''i'' composed of 6 consecutive minutes with at least one converter blowing and no interferences; and

VE_i=6-minute average opacity calculated for period ''i'' (percent).

(d) *Conduct of new copper converter department visible emission performance tests.* The owner or operator shall determine compliance with the visible emission limit for new copper converter departments specified in § 63.1446(c) of this subpart by using the procedure specified in paragraphs (d)(1) through (d)(3) of this section.

(1) *Test conditions.* The test shall be made during the period when the primary copper smelter is operating under conditions representative of the smelter's normal blister copper production rate. Before conducting the opacity observations, the owner or operator shall prepare a written test plan specifying the copper production conditions to be maintained throughout the visible emission observation period. A copy of the test plan shall be submitted for review and approval by the Administrator or delegated authority. During the observation period, the owner or operator shall collect appropriate process information to prepare sufficient documentation to verify that all visible emission observations were made during the conditions specified in the approved test plan.

(2) *Test notification.* The owner or operator shall notify the Administrator or delegated authority before conducting the test to allow the Administrator or delegated authority the opportunity to have authorized representatives attend the test. Written notification of the location and scheduled date for conducting the visible emission observations shall be received by the Administrator on or before 30 calendar days before this scheduled date.

(3) *Test procedure.* The visible emissions from the building housing the copper converter department shall be determined using Method 22 in appendix A of part 60 of this chapter, with an observation period of no less than 2 hours.

§ 63.1452 Inspection and monitoring requirements.

(a) *General.* The requirements of this section apply to an owner or operator of an affected source required to install and operate air emission control equipment in accordance with applicable standards under §§ 63.1442 through 63.1446 of this subpart.

(b) *Capture system inspection requirements.* The owner or operator shall inspect each capture system operated to meet applicable standards under § 63.1044 through § 63.1046 of this subpart in accordance with the requirements in paragraphs (b)(1) through (b)(4) of this section.

(1) Each inspection shall include visually checking all of the capture system components to detect any defects or damage that could diminish or impair capture system performance from the level that the capture system achieves when it is properly operated and maintained. Examples of such defects or damage include, but are not limited to, openings through which gases can escape as indicated by the presence of cracks, holes, or gaps in hoods or ductwork; flow constrictions caused by dents or accumulated dust in ductwork; and reduced fan performance as indicated by fan blade erosion.

(2) An inspection of each capture system shall be conducted at least once every month.

(3) In the event a defect or damaged component is detected, the owner or operator shall replace or repair the component consistent with the corrective action procedures identified in the startup, shutdown, and malfunction plan. The owner or operator shall complete the repair as soon as practicable but no later than 30 calendar days after the date of detection except under the special circumstances described in paragraph (b)(4) of this section.

(4) Delay of repair of a capture system defect beyond 30 calendar days is allowed when the repair cannot be completed within the 30-day period because of factors beyond the direct control of the owner or operator (e.g., time required to obtain a critical replacement part from the manufacturer). In this case, the repair shall be completed as soon as practicable, consistent with the corrective action procedures identified in the startup, shutdown, and malfunction plan. For each repair delay, the owner or operator shall maintain a record describing the work required to complete the repair, the reason for the repair delay, and the date that completion of the repair is planned.

(c) *Copper converter department capture system monitoring requirements.* The owner or operator shall ensure that each copper converter department capture system required under § 63.1446 of this subpart is properly operated and maintained by monitoring the operation of the capture system as required in paragraphs (c)(1) through (c)(5) of this section.

(1) During each performance test conducted to demonstrate compliance with a visible emission limit under § 63.1446 of this subpart, a range of operating values shall be established for the copper converter department capture system that is a representative and reliable indicator that the capture system is being properly operated and maintained (i.e., operating within the same range of conditions used to demonstrate compliance of the capture system with the applicable visible emission limit specified in § 63.1446 of this subpart). This range of operating values shall be established for the capture system using the procedure in paragraphs (c)(1)(i) through (c)(1)(iv) of this section.

(i) The owner or operator shall select a set of operating parameters appropriate for the capture system design that the owner or operator determines to be a representative and reliable indicator of the capture system performance. Appropriate capture system operating parameter sets include, but are not limited to:

(A) Capture system fan motor amperes with all duct damper position settings; or

(B) Volumetric flow rate through each separately ducted hood.

(ii) The owner or operator shall measure and record each of the selected operating parameters during all visible emission observations conducted for the capture system performance test. At a minimum, a value for each selected parameter shall be recorded at least once every 15 minutes.

(iii) For each selected operating parameter monitored in accordance with the requirements of paragraph (c)(1)(ii) of this section, the owner or operator shall establish a minimum operating parameter limit or a maximum operating parameter limit, as appropriate for the parameter, to define the operating limits within which the capture system can operate and still continuously achieve the same operating conditions used to demonstrate compliance of the capture system with the applicable visible emission limit specified in § 63.1446 of this subpart.

(iv) The owner or operator shall prepare written documentation to support the operating parameter limits established for the capture system. This documentation shall include a description for each selected parameter and the operating range and monitoring frequency required to ensure the capture system is being properly operated and maintained.

(2) The owner or operator shall monitor the selected operating parameters in accordance with the requirements of either paragraph (c)(2)(i) or (c)(2)(ii) of this section, as applicable.

(i) Except in those cases when the owner or operator elects to monitor the operating parameter set specified in paragraph (c)(1)(i)(A) of this section, the owner or operator shall install, calibrate, operate, and maintain a device equipped with a recorder to measure the values for each operating parameter selected in accordance with the requirements of paragraph (c)(1) of this section. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The recorder shall be a data recording device that either records an instantaneous data value for the operating parameter at least once every 15 minutes or records 15-minute or more frequent block average values.

(ii) In those cases when the owner or operator elects to monitor the operating parameter set specified in paragraph (c)(1)(i)(A) of this section, the owner or operator shall develop and implement a written procedure for the converter operator or other appropriate worker to check at least once per shift that fan amperage and damper positions are within the operating parameter limits established for the capture system.

(3) The owner or operator shall regularly inspect the data recorded by the operating parameter monitoring system at a sufficient frequency to ensure the capture system is operating properly. An excursion is determined to have occurred any time that the actual value of a selected operating parameter is less than the minimum operating limit (or, if applicable, greater than the maximum operating limit) established for the parameter in accordance with the requirements of paragraph (c)(1) of this section.

(4) Whenever an excursion occurs, the owner or operator shall initiate within one hour of detecting the excursion the corrective action procedures identified in the startup, shutdown, and malfunction plan as necessary to restore the operation of the capture system to the proper operating settings. Failure to initiate the corrective action procedures within one hour of detecting an excursion or to take the necessary corrective actions to remedy the problem is a violation of the standard in this subpart.

(5) For a given operating parameter, if an excursion occurs six or more times in any semi-annual reporting period, then any subsequent excursion of that

operating parameter during the reporting period is a violation of the standard in this subpart. For the purpose of determining the number of excursions in a semi-annual reporting period, only one excursion shall be counted in any given 24-hour period.

(d) *Baghouse inspection and monitoring requirements.*

(1) The owner or operator shall prepare and at all times operate according to a standard operating procedures (SOP) manual for inspection, maintenance, and bag leak detection, and corrective action plans for each baghouse used to comply with applicable standards under §§ 63.1442 through 63.1446 of this subpart. The requirements of this paragraph do not apply to a baghouse that is operated exclusively to control fugitive dust emissions.

(2) The procedures specified in the SOP manual for inspections and routine maintenance of a baghouse shall, at a minimum, include the requirements of paragraphs (d)(2)(i) through (d)(2)(ix) of this section.

(i) Daily monitoring of pressure drop across each baghouse cell;

(ii) Weekly confirmation that dust is being removed from hoppers through visual inspection, or equivalent means of ensuring the proper functioning of removal mechanisms;

(iii) Daily check of compressed air supply for pulse-jet baghouses;

(iv) An appropriate methodology for monitoring cleaning cycles to ensure proper operation;

(v) Monthly check of bag cleaning mechanisms for proper functioning through visual inspection or equivalent means;

(vi) Quarterly check of bag tension on reverse air and shaker-type baghouses. Such checks are not required for shaker-type baghouses using self-tensioning (spring loaded) devices;

(vii) Quarterly confirmation of the physical integrity of the baghouse through visual inspection of the baghouse interior for air leaks;

(viii) Quarterly inspection of fans for wear, material buildup, and corrosion through visual inspection, vibration detectors, or equivalent means; and

(ix) Continuous operation of a bag leak detection system.

(3) The procedures for maintenance specified in the SOP manual shall, at a minimum, include a preventative maintenance schedule that is consistent with the baghouse manufacturer's instructions for routine and long-term maintenance.

(4) The bag leak detection system required by paragraph (d)(1) of this section, shall meet the specifications and requirements of paragraphs (d)(3)(i) through (d)(3)(viii) of this section.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 mg/acfm or less;

(ii) The bag leak detection system sensor must provide output of relative particulate matter loadings;

(iii) The bag leak detection system must be equipped with an alarm system that will sound an audible alarm when an increase in relative particulate loadings is detected over a preset level;

(iv) The bag leak detection system shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system;

(v) The initial adjustment of the system shall, at a minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time;

(vi) Following initial adjustment, the owner or operator shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the SOP manual required under paragraph (d)(1) of this section. In no event shall the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection which demonstrates the baghouse is in good operating condition;

(vii) For negative pressure or induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector must be installed downstream of the baghouse and upstream of any wet acid gas scrubber; and

(viii) Where multiple detectors are required, the system's instrumentation and alarm system may be shared among the detectors.

(5) The SOP manual required by paragraph (d)(1) of this section shall include a corrective action plan that specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan shall include, at a minimum, the procedures used to determine and record the time and cause of the alarm as well as the corrective actions taken to correct the control device malfunction or minimize emissions as specified in paragraphs (d)(4)(i) and (d)(4)(ii) of this section. Failure to initiate the corrective action required by this paragraph is a violation of the standard in this subpart.

(i) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the time the alarm first sounds; and

(ii) The cause of the alarm must be alleviated by taking the necessary corrective action(s) which may include, but are not to be limited to, the actions in paragraphs (d)(5)(ii)(A) through (d)(5)(ii)(F) of this section.

(A) Inspecting the baghouse for air leaks, torn or broken filter elements, or any other malfunction that may cause an increase in emissions;

(B) Sealing off defective bags or filter media;

(C) Replacing defective bags or filter media, or otherwise repairing the control device;

(D) Sealing off a defective baghouse compartment;

(E) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system; or

(F) Shutting down the process producing the particulate emissions.

(e) *Monitoring of venturi wet scrubbers.* For each venturi wet scrubber operated to comply with applicable particulate matter emission limits in §§ 63.1442 through 63.1446 of this subpart, the owner or operator shall ensure that the venturi wet scrubber is properly operated and maintained by monitoring the operation of the wet control device as required in paragraphs (e)(1) through (e)(3) of this section.

(1) During each performance test conducted to demonstrate compliance of a venturi wet scrubber outlet gas stream with the applicable particulate matter emission limit, minimum operating values shall be established for the scrubber pressure drop and the scrubber water flow rate. These operating values shall be established for the venturi wet scrubber using the procedure in paragraphs (e)(1)(i) through (e)(1)(iii) of this section.

(i) The owner or operator shall measure and record values for the scrubber pressure drop and scrubber water flow rate during each test run conducted for a performance test to demonstrate compliance with the applicable standard. At a minimum, a value for each operating parameter shall be recorded at least once every 15 minutes during the test run.

(ii) For each operating parameter measured in accordance with the requirements of paragraphs (e)(1)(i) of this section, the owner or operator shall establish an operating parameter limit to define the minimum scrubber pressure drop and minimum scrubber water flow rate at which the scrubber can operate and still continuously achieve the applicable particulate matter emission limit.

(iii) The owner or operator shall prepare written documentation to support the minimum operating parameter limits established for the scrubber.

(2) The owner or operator shall install, calibrate, operate, and maintain monitoring devices equipped with a recorder to measure the values for scrubber pressure drop and scrubber water flow rate. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The recorder shall be a data recording device that either records an instantaneous data value for the operating parameter at least once every 15 minutes or records 15-minute or more frequent block average values.

(3) The owner or operator shall regularly inspect the data recorded by the operating parameter monitoring system at a sufficient frequency to ensure the scrubber is operating properly. An excursion is determined to have occurred any time that the actual value of the scrubber pressure drop or water flow rate is less than the minimum limit established for the parameter in accordance with the requirements of paragraph (e)(1) of this section. Any excursion recorded for the venturi wet scrubber shall be a violation of the standard in this subpart.

(f) *Monitoring of control devices other than baghouses or venturi wet scrubbers.* For each control device that is not a baghouse or venturi wet scrubber but is operated to comply with applicable particulate matter emission limits in §§ 63.1442 through 63.1446 of this subpart, the owner or operator shall ensure that the control device is properly operated and maintained by monitoring the operation of the control device as required in paragraphs (f)(1) through (f)(4) of this section.

(1) During each performance test conducted to demonstrate compliance of a control device outlet gas stream with the applicable particulate matter emission limit, a range of operating values shall be established for the control device that is a representative and reliable indicator that the control device is operating within the same range of conditions used to demonstrate compliance of the control device with the applicable particulate matter emission limit. This range of operating values shall be established for the control device using the procedure in paragraphs (f)(1)(i) through (f)(1)(iv) of this section.

(i) The owner or operator shall select a set of operating parameters appropriate for the control device design that the owner or operator determines to be a representative and reliable indicator of the control device performance.

(ii) The owner or operator shall measure and record values for each of the selected operating parameters during each test run conducted for the performance test to demonstrate compliance with the applicable standard. At a minimum, a value for each selected parameter shall be recorded at least once every 15 minutes.

(iii) For each selected operating parameter measured in accordance with the requirements of paragraphs (f)(1)(ii) of this section, the owner or operator shall establish a minimum operating parameter limit or a maximum operating parameter limit, as appropriate for the parameter, to define the operating limits within which the control device can operate and still continuously achieve the same operating conditions used to demonstrate compliance of the control device with the applicable particulate matter emission limit.

(iv) The owner or operator shall prepare written documentation to support the operating parameter limits established for the control device. This documentation shall include a description for each selected parameter and the operating range and monitoring frequency required to ensure the control device is being properly operated and maintained.

(2) The owner or operator shall install, calibrate, operate, and maintain a monitoring device equipped with a recorder to measure the values for each operating parameter selected in accordance with the requirements of paragraph (f)(1) of this section. The monitoring equipment shall be installed, calibrated, and maintained in accordance with the equipment manufacturer's specifications. The recorder shall be a data recording device that either records an instantaneous data value for the operating parameter at least once every 15 minutes or records 15-minute or more frequent block average values.

(3) The owner or operator shall regularly inspect the data recorded by the operating parameter monitoring system at a sufficient frequency to ensure the control device is operating properly. An excursion is determined to have occurred any time that the actual value of a selected operating parameter is less than the minimum operating limit (or, if applicable, greater than the maximum operating limit) established for the parameter in accordance with the requirements of paragraph (f)(1) of this section.

(4) Whenever an excursion occurs, the owner or operator shall initiate within one hour of detecting the excursion the corrective action procedures identified in the startup, shutdown, and malfunction plan as necessary to restore the operation of the control device to the proper operating settings. Failure to initiate the corrective action procedures within one hour of detecting an excursion or to take the necessary corrective actions to remedy the problem is a violation of the standard in this subpart.

§ 63.1453 Notification requirements.

(a) The requirements of this section apply to the owner and operator of a primary copper smelter that is subject to the requirements of this subpart.

(b) The owner or operator shall prepare and submit written notifications to the Administrator in accordance with § 63.9 of the general provisions in subpart A of this part.

§ 63.1454 Recordkeeping and reporting requirements.

(a) *General.* The requirements of this section apply to the owner and operator of a primary copper smelter that is subject to the requirements of this subpart.

(b) *Recordkeeping requirements.* The owner or operator shall prepare and maintain, in accordance with the requirements in § 63.10(b)(1) of the general provisions in subpart A of this part, files of information specified in paragraphs (b)(1) through (b)(9) of this section. The owner or operator shall maintain records for a least 5 years from the date of each record. The records for the most recent 2 years of operation shall be maintained at the smelter site. Records for previous years may be maintained at an off-site location.

(1) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment);

(2) The occurrence and duration of each malfunction of the air pollution control equipment;

(3) All maintenance performed on the air pollution control equipment;

(4) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan prepared in accordance with the requirements of § 63.6 of the general provisions in subpart A of this part.;

(5) Information necessary to demonstrate compliance with the affected source's startup, shutdown, and malfunction plan (prepared in accordance with the requirements of § 63.6 of this part) when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the startup, shutdown, and malfunction plan may be recorded using a ''checklist,'' or another effective form of recordkeeping, to reduce the recordkeeping burden for conforming events);

(6) Measurements and other supporting documentation needed to demonstrate compliance with a relevant standard (including, but not limited to, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report);

(7) Results of all performance tests and opacity observations performed in accordance with the requirements of this subpart;

(8) Data recorded to meet the applicable monitoring requirements of § 63.1452 of this subpart.

(9) Documentation supporting notifications submitted under § 63.1453 of this subpart.

(c) *Reporting requirements.* The owner or operator shall prepare and submit written reports to the Administrator in accordance with § 63.10 of the general provisions in subpart A of this part.

§ 63.1455 State authority and delegations.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authority listed in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority will not be delegated to States for approval of alternative test methods under § 63.1451 of this subpart.

Appendix A to Subpart QQQ—Applicability of General Provisions (40 CFR part 63, subpart A) to Subpart QQQ

Citation	Applies to subpart QQQ	Comment
63.1	yes	
63.2	yes	
63.3	yes	
63.4	yes	
63.5	yes	
63.6 (a)–63.6 (g).	yes	
63.6 (h)	no for existing sources.	Subpart QQQ specifies requirements to be used for compliance with the visible emission limits.
63.6 (i)–63.6 (j).	yes	
63.7	yes	
63.8	yes	
63.9 (a)–163.9 (e).	yes	
63.9 (f)	no for existing sources.	Subpart QQQ specifies notification requirements for visible emission limit compliance test.
63.9 (g)–63.9 (j).	yes	
63.10	yes	
63.11	no	Flares not used to comply with Subpart QQQ standards.
63.12–63.15.	yes	

FIGURE 1.—OF SUBPART QQQ DATA SUMMARY SHEET FOR DETERMINATION OF AVERAGE OPACITY

Clock time	Number of converters blowing	Converter aisle activity	1-minute average opacity (percent)	Blowing without Interferences (yes or no)	Continuous 6-minute average opacity (percent)

[FR Doc. 98–10142 Filed 4–17–98; 8:45 am]

BILLING CODE 6560–50–P