

opacity is any 6-minute period during which the average opacity, as measured by the continuous monitoring system, exceeds the opacity level determined under § 61.163(c)(3) or the opacity level redetermined under § 61.163(d).

(3) Ensure that any semiannual report of excess opacity required by paragraph (f)(2) of this section is postmarked by the thirtieth day following the end of the 6-month period and includes the following information:

(i) The magnitude of excess opacity, any conversion factor(s) used, and the date and time of commencement and completion of each occurrence of excess opacity.

(ii) Specific identification of each occurrence of excess opacity that occurs during startups, shutdowns, and malfunctions of the source.

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments.

[51 FR 28025, Aug. 4, 1986, as amended at 65 FR 62158, Oct. 17, 2000]

Subpart O—National Emission Standard for Inorganic Arsenic Emissions From Primary Copper Smelters

SOURCE: 51 FR 28029, Aug. 4, 1986, unless otherwise noted.

§ 61.170 Applicability and designation of source.

The provisions of this subpart are applicable to each copper converter at any new or existing primary copper smelter, except as noted in § 61.172(a).

§ 61.171 Definitions.

All terms used in this subpart shall have the meanings given to them in the Act, in subpart A of part 61, and in this section as follows:

Blowing means the injection of air or oxygen-enriched air into a molten converter bath.

Charging means the addition of a molten or solid material to a copper converter.

Control device means the air pollution control equipment used to collect particulate matter emissions.

Converter arsenic charging rate means the hourly rate at which arsenic is charged to the copper converters in the copper converter department based on the arsenic content of the copper matte and of any lead matte that is charged to the copper converters.

Copper converter means any vessel in which copper matte is charged and is oxidized to copper.

Copper converter department means all copper converters at a primary copper smelter.

Copper matte means any molten solution of copper and iron sulfides produced by smelting copper sulfide ore concentrates or calcines.

Holding of a copper converter means suspending blowing operations while maintaining in a heated state the molten bath in the copper converter.

Inorganic arsenic means the oxides and other noncarbon compounds of the element arsenic included in particulate matter, vapors, and aerosols.

Lead matte means any molten solution of copper and other metal sulfides produced by reduction of sinter product from the oxidation of lead sulfide ore concentrates.

Malfunction means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of inorganic arsenic are increased.

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

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

Pouring means the removal of blister copper from the copper converter bath.

Primary copper smelter means any installation or intermediate process engaged in the production of copper from copper-bearing materials through the use of pyrometallurgical techniques.

Primary emission control system means the hoods, ducts, and control devices used to capture, convey, and collect process emissions.

Process emissions means inorganic arsenic emissions from copper converters

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that are captured directly at the source of generation.

Secondary emissions means inorganic arsenic emissions that escape capture by a primary emission control system.

Secondary hood system means the equipment (including hoods, ducts, fans, and dampers) used to capture and transport secondary inorganic arsenic emissions.

Shutdown means the cessation of operation of a stationary source for any reason.

Skimming means the removal of slag from the molten converter bath.

§61.172 Standard for new and existing sources.

(a) The provisions of paragraphs (b)–(f) of this section do not apply to any copper converter at a facility where the total arsenic charging rate for the copper converter department averaged over a 1-year period is less than 75 kg/hr (165 lb/hr), as determined under §61.174(f).

(b) The owner or operator of each copper converter subject to the provisions of this subpart shall reduce inorganic arsenic emissions to the atmosphere by meeting the following design, equipment, work practice, and operational requirements:

(1) Install, operate, and maintain a secondary hood system on each copper converter. Each secondary hood system shall consist of a hood enclosure, air curtain fan(s), exhaust system fan(s), and ductwork that conveys the captured emissions to a control device, and shall meet the following specifications:

(i) The configuration and dimensions of the hood enclosure shall be such that the copper converter mouth, charging ladles, skimming ladles, and any other material transfer vessels used will be housed within the confines or influence of the hood enclosure during each mode of copper converter operation.

(ii) The back of the hood enclosure shall be fully enclosed and sealed against the primary hood. Portions of the side-walls in contact with the copper converter shall be sealed against the converter.

(iii) Openings in the top and front of the hood enclosure to allow for the

entry and egress of ladles and crane apparatus shall be minimized to the fullest extent practicable.

(iv) The hood enclosure shall be fabricated in such a manner and of materials of sufficient strength to withstand incidental contact with ladles and crane apparatus with no significant damage.

(v) One side-wall of the hood enclosure shall be equipped with a horizontal-slotted plenum along the top, and the opposite side-wall shall be equipped with an exhaust hood. The horizontal-slotted plenum shall be designed to allow the distance from the base to the top of the horizontal slot to be adjustable up to a dimension of 76 mm.

(vi) The horizontal-slotted plenum shall be connected to a fan. When activated, the fan shall push air through the horizontal slot, producing a horizontal air curtain above the copper converter that is directed to the exhaust hood. The fan power output installed shall be sufficient to overcome static pressure losses through the ductwork upstream of the horizontal-slotted plenum and across the plenum, and to deliver at least 22,370 watts (30 air horsepower) at the horizontal-slotted plenum discharge.

(vii) The exhaust hood shall be sized to completely intercept the airstream from the horizontal-slotted plenum combined with the additional airflow resulting from entrainment of the surrounding air. The exhaust hood shall be connected to a fan. When activated, the fan shall pull the combined airstream into the exhaust hood.

(viii) The entire secondary hood system shall be equipped with dampers and instrumentation, as appropriate, so that the desired air curtain and exhaust flow are maintained during each mode of copper converter operation.

(2) Optimize the capture of secondary inorganic arsenic emissions by operating the copper converter and secondary hood system at all times as follows:

(i) *Copper converter.* (A) Increase the air curtain and exhaust flow rates to their optimum conditions prior to raising the primary hood and rolling the copper converter out for charging, skimming, or pouring.

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(B) Once rolled out, prior to the commencement of skimming or pouring, hold the copper converter in an idle position until fuming from the molten bath has been minimized.

(C) During skimming, raise the receiving ladle off the ground and position the ladle as close to the copper converter mouth as possible to minimize the drop distance between the converter mouth and the receiving ladle.

(D) Control the rate of flow into the receiving ladle to the extent practicable to minimize fuming.

(E) Upon the completion of each charge, withdraw the charging ladle or vessel used from the confines of the secondary hood in a slow, deliberate manner.

(F) During charging, skimming, or pouring, ensure that the crane block does not disturb the air flow between the horizontal-slotted plenum and the exhaust hood.

(ii) *Secondary hood system.* (A) Operate the secondary hood system under conditions that will result in the maximum capture of inorganic arsenic emissions.

(B) Within 30 days after the effective date of this subpart, or within 30 days after the initial operation of each secondary hood system, whichever comes later, provide to the Administrator a list of operating conditions for the secondary hood system that will result in the maximum capture of inorganic arsenic emissions. This list shall specify the operating parameters for the following:

(1) The dimensions of the horizontal slot.

(2) The velocity of air through the horizontal slot during each mode of converter operation.

(3) The distance from the horizontal slot to the exhaust hood.

(4) The face velocity at the opening of the exhaust hood during each mode of converter operation.

(C) Operate the secondary hood system under the conditions listed in paragraph (b)(2)(ii)(B) of this section, unless otherwise specified by the Administrator.

(D) Notify the Administrator in writing within 30 days if there is any change in the operating conditions sub-

mitted pursuant to the requirements of paragraph (b)(2)(ii)(B) that will result in any reduction in the maximum capture of inorganic arsenic emissions.

(3) Comply with the following inspection and maintenance requirements after installing the secondary hood system required in paragraph (b)(1) of this section:

(i) At least once every month, visually inspect the components of the secondary hood system that are exposed to potential damage from crane and ladle operation, including the hood enclosure, side- and back-wall hood seals, and the horizontal slot.

(ii) Replace or repair any defective or damaged components of the secondary hood system within 30 days after discovering the defective or damaged components.

(c) No owner or operator of a copper converter subject to the provisions of this subpart shall cause or allow to be discharged into the atmosphere any copper converter secondary emissions that exit from a control device and contain particulate matter in excess of 11.6 mg/dscm (0.0051 gr/dscf).

(d) The owner or operator of a copper converter subject to the provisions of this subpart shall submit a description of a plan for control of inorganic arsenic emissions from the copper converter and associated air pollution control equipment. This plan shall be submitted within 90 days after the effective date of this subpart, unless a waiver of compliance is granted under § 61.11. If a waiver of compliance is granted, the plan shall be submitted on a date set by the Administrator. Approval of the plan will be granted by the Administrator provided he finds that:

(1) It includes a systematic procedure for identifying malfunctions and for reporting them immediately to smelter supervisory personnel.

(2) It specifies the procedures that will be followed to ensure that equipment or process breakdowns due entirely or in part to poor maintenance or other preventable conditions do not occur.

(3) It specifies the measures that will be taken to ensure compliance with paragraph (b)(2) of this section.

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(e) The owner or operator shall implement the plan required under paragraph (d) of this section unless otherwise specified by the Administrator.

(f) At all times, including periods of startup, shutdown, and malfunction, the owner or operator of a copper converter subject to the provisions of this subpart shall operate and maintain the converter and associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions of inorganic arsenic to the atmosphere to the maximum extent practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator, which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, inspection of the source, and review of other records.

[51 FR 28029, Aug. 4, 1986, as amended at 65 FR 62158, Oct. 17, 2000]

§61.173 Compliance provisions.

(a) The owner or operator of each copper converter to which §61.172(b)–(f) applies shall demonstrate compliance with the requirements of §61.172(b)(1) as follows:

(1) The owner or operator of each existing copper converter shall install a secondary hood system to meet the requirements of §61.172(b)(1) no later than 90 days after the effective date, unless a waiver of compliance has been approved by the Administrator in accordance with §61.11.

(2) The owner or operator of each new copper converter shall install a secondary hood system to meet the requirements of §61.172(b)(1) prior to the initial startup of the converter, except that if startup occurs prior to the effective date, the owner or operator shall meet the requirements of §61.172(b)(1) on the effective date.

§61.174 Test methods and procedures.

(a) To determine compliance with §61.172(c), the owner or operator shall conduct emission tests and reduce the test data in accordance with the test methods and procedures contained in this section unless the Administrator:

(1) Specifies or approves, in specific cases, the use of a reference method with minor changes in methodology,

(2) Approves the use of an equivalent method,

(3) Approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance, or

(4) Waives the requirement for emission tests as provided in §61.13.

(b) The owner or operator shall conduct the emission tests required in paragraph (a) of this section:

(1) After achieving the optimum operating conditions submitted under §60.172(b)(2)(ii)(B) for the equipment required in §61.172(b)(1), but no later than 90 days after the effective date of this subpart in the case of an existing copper converter or a copper converter that has an initial startup date preceding the effective date, or

(2) After achieving the optimum operating conditions submitted under §60.172(b)(2)(ii)(B) for the equipment required in §61.172(b)(1), but no later than 90 days after startup in the case of a new copper converter, initial startup of which occurs after the effective date, or

(3) At such other times as may be required by the Administrator under section 114 of the Act.

(c) The owner or operator shall conduct each emission test under representative operating conditions and at sample locations subject to the Administrator's approval, and shall make available to the Administrator such records as may be necessary to determine the conditions of the emission test.

(d) For the purpose of determining compliance with §61.172(c), the owner or operator shall use reference methods in 40 CFR part 60, appendix A, as follows:

(1) Method 5 for the measurement of particulate matter,

(2) Method 1 for sample and velocity traverses,

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

(4) Method 3 for gas analysis, and

(5) Method 4 for stack gas moisture.

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(e) For Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes when necessitated by process variables or other factors may be approved by the Administrator.

(f) For the purpose of determining applicability under § 61.172(a), the owner or operator shall determine the converter arsenic charging rate as follows:

(1) Collect daily grab samples of copper matte and any lead matte charged to the copper converters.

(2) Each calendar month, from the daily grab samples collected under paragraph (f)(1) of this section, put together a composite copper matte sample and a composite lead matte sample. Analyze the composite samples individually using Method 108A, 108B, or 108C to determine the weight percent of inorganic arsenic contained in each sample.

(3) Calculate the converter arsenic charging rate once per month using the following equation:

$$R_c = \sum_{i=1}^n \frac{A_c W_{ci} + A_l W_{li}}{100 H_c}$$

Where:

R_c is the converter arsenic charging rate, kg/hr (lb/hr).

A_c is the monthly average weight percent of arsenic in the copper matte charged during the month(%) as determined under paragraph (f)(2) of this section.

A_l is the monthly average weight percent of arsenic in the lead matte charged during the month(%) as determined under paragraph (f)(2) of this section.

W_{ci} is the total rate of copper matte charged to a copper converter during the month, kg (lb).

W_{li} is the total rate of lead matte charged to a copper converter during the month, kg (lb).

H_c is the total number of hours the copper converter department was in operation during the month (hr).

n is the number of copper converters in operation during the month.

(4) Determine an annual arsenic charging rate for the copper converter department once per month by computing the arithmetic average of the 12 monthly converter arsenic charging rate values (R_c) for the preceding 12-month period.

(g) An owner or operator may petition the Administrator for a modified sampling and analysis schedule if analyses performed for the first 12-month period after the effective date show the source to be considerably below the applicability limit prescribed in § 61.172(a).

[51 FR 28029, Aug. 4, 1986, as amended at 55 FR 22027, May 31, 1990; 65 FR 62158, Oct. 17, 2000]

§ 61.175 Monitoring requirements.

(a) Each owner or operator of a source that is subject to the emission limit specified in § 61.172(c) shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of emissions discharged from the control device according to the following procedures:

(1) Ensure that each system is installed and operational no later than 90 days after the effective date of this subpart for a source that has an initial startup date preceding the effective date; and no later than 90 days after startup for other sources. Verification of the operational status shall, as a minimum, consist of an evaluation of the monitoring system in accordance with the requirements and procedures contained in Performance Specification 1 of appendix B of 40 CFR part 60.

(2) Comply with the provisions of § 60.13(d) of 40 CFR part 60.

(3) Except for system breakdowns, repairs, calibration checks, and zero span adjustments, ensure that each continuous monitoring system is in continuous operation and meets frequency of operation requirements by completing a minimum of one cycle of sampling and analysis for each successive 10-second period and one cycle of data recording for each successive 6-minute period. Each data point shall represent the opacity measured for one cycle of sampling and analysis and shall be expressed as percent opacity.

(b) Except as required in paragraph (c) of this section, calculate 1-hour opacity averages from 360 or more consecutive data points equally spaced over each 1-hour period. Data recorded during periods of monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments

shall not be included in the data averages computed under this paragraph.

(c) No later than 60 days after each continuous opacity monitoring system required in paragraph (a) of this section becomes operational, the owner or operator shall establish a reference opacity level for each monitored emission stream according to the following procedures:

(1) Conduct continuous opacity monitoring over a preplanned period of not less than 36 hours during which the processes and emission control equipment upstream of the monitoring system are operating under representative operating conditions subject to the Administrator's approval. This period shall include the time during which the emission test required by §61.13 is conducted.

(2) Calculate 6-minute averages of the opacity readings using 36 or more consecutive data points equally spaced over each 6-minute period.

(3) Calculate 1-hour average opacity values using 10 successive 6-minute average opacity values (i.e., calculate a new 1-hour average opacity value every 6 minutes). Determine the highest 1-hour average opacity value observed during the 36-hour preplanned test period.

(4) Calculate the reference opacity level by adding 5 percent opacity to the highest 1-hour average opacity calculated in paragraph (c)(3) of this section.

(d) The owner or operator may redetermine the reference opacity level for the copper converter secondary emission stream at the time of each emission test that demonstrates compliance with the emission limit required in §61.172(c) according to the provisions of paragraphs (c)(1) through (c)(4) of this section.

(e) With a minimum of 30 days prior notice, the Administrator may require the owner or operator to redetermine the reference opacity level for any monitored emission stream.

(f) Each owner or operator who is required to install the equipment specified in §61.172(b)(1) for the capture of secondary copper converter emissions shall install, calibrate, maintain, and operate a continuous monitoring device on each secondary hood system for

the measurement of the air flow through the horizontal-slotted plenum and through the exhaust hood. Each device shall be installed and operational no later than 90 days after the effective date of this subpart for a source that has an initial startup preceding the effective date; and no later than 90 days after startup for other sources.

(g) Each owner or operator subject to the requirements in paragraph (f) of this section shall establish for each secondary hood system reference air flow rates for the horizontal-slotted plenum and exhaust hood for each mode of converter operation. The reference flow rates shall be established when the equipment is operating under the optimum operating conditions required in §61.172(b)(2)(ii).

(h) Each owner or operator shall install the continuous monitoring systems and monitoring devices required in paragraphs (a) and (f) of this section in such a manner that representative measurements of emissions and process parameters are obtained.

§61.176 Recordkeeping requirements.

(a) Each owner or operator subject to the requirements of §61.172(b)(1) shall maintain at the source for a period of at least 2 years records of the visual inspections, maintenance, and repairs performed on each secondary hood system as required in §61.172(b)(3).

(b) Each owner or operator subject to the provisions of §61.172(c) shall maintain at the source for a period of at least 2 years and make available to the Administrator upon request a file of the following records:

(1) All measurements, including continuous monitoring for measurement of opacity;

(2) Records of emission test data and all calculations used to produce the required reports of emission estimates to demonstrate compliance with §61.172(c);

(3) All continuous monitoring system performance evaluations, including calibration checks and adjustments;

(4) The occurrence and duration of all startups, shutdowns, and malfunctions of the copper converters;

(5) All malfunctions of the air pollution control system;

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(6) All periods during which any continuous monitoring system or device is inoperative;

(7) All maintenance and repairs performed on each air pollution control system, continuous monitoring system, or monitoring device;

(8) All records of 1-hour average opacity levels for each separate control device; and

(9) For each secondary hood system:

(i) The reference flow rates for the horizontal-slotted plenum and exhaust hood for each converter operating mode established under § 61.175(g);

(ii) The actual flow rates; and

(iii) A daily log of the start time and duration of each converter operating mode.

(c) Each owner or operator subject to the provisions of this subpart shall maintain at the source for a period of at least 2 years and make available to the Administrator upon request the following records:

(1) For each copper converter, a daily record of the amount of copper matte and lead matte charged to the copper converter and the total hours of operation.

(2) For each copper converter department, a monthly record of the weight percent of arsenic contained in the copper matte and lead matte as determined under § 61.174(f).

(3) For each copper converter department, the monthly calculations of the average annual arsenic charging rate for the preceding 12-month period as determined under § 61.174(f).

§ 61.177 Reporting requirements.

(a) Each owner or operator subject to the provisions of § 61.172(c) shall:

(1) Provide the Administrator 30 days prior notice of the emission test required in § 61.174(a) to afford the Administrator the opportunity to have an observer present; and

(2) Submit to the Administrator a written report of the results of the emission test required in § 61.174(a) within 60 days after conducting the test.

(b) Each owner or operator subject to the provisions of § 61.175(a) shall provide the Administrator at least 30 days prior notice of each reference opacity level determination required in

§ 61.175(c) to afford the Administrator the opportunity to have an observer present.

(c) Each owner or operator subject to the provisions of § 61.175(a) shall submit to the Administrator:

(1) Within 60 days after conducting the evaluation required in § 61.175(a)(1), a written report of the continuous monitoring system evaluation;

(2) Within 30 days after establishing the reference opacity level required in § 61.175(c), a written report of the reference opacity level. The report shall also include the opacity data used and the calculations performed to determine the reference opacity level, and sufficient documentation to show that process and emission control equipment were operating normally during the reference opacity level determination; and

(3) A written report each quarter of each occurrence of excess opacity during the quarter. For purposes of this paragraph, an occurrence of excess opacity is any 1-hour period during which the average opacity, as measured by the continuous monitoring system, exceeds the reference opacity level established under § 61.175(c).

(d) The owner or operator subject to the provisions of § 61.175(g) shall submit to the Administrator:

(1) A written report of the reference air flow rate within 30 days after establishing the reference air flow rates required in § 61.175(g);

(2) A written report each quarter of all air flow rates monitored during the preceding 3-month period that are less than 80 percent of the corresponding reference flow rate established for each converter operating mode; and

(3) A written report each quarter of any changes in the operating conditions of the emission capture system, emission control device, or the building housing the converters that might increase fugitive emissions.

(e) All quarterly reports shall be postmarked by the 30th day following the end of each 3-month period and shall include the following information:

(1) The magnitude of each occurrence of excess opacity, any conversion factor(s) used, and the dates and times of commencement and completion of each

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occurrence of excess opacity, the cause of each exceedance of the reference opacity level, and the measures taken to minimize emissions.

(2) The magnitude of each occurrence of reduced flow rate and the date and time of commencement and completion of each occurrence of reduced flow rate, the cause of the reduced flow rate, and the associated converter operating mode.

(3) Specific identification of each occurrence of excess opacity or reduced flow rate that occurs during startups, shutdowns, and malfunctions of the source.

(4) The date and time identifying each period during which the continuous monitoring system or monitoring device was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments.

(5) Specific identification of each change in operating conditions of the emission capture system or control device, or in the condition of the building housing the converters.

(f) Each owner or operator of a source subject to the provisions of this subpart shall submit annually a written report to the Administrator that includes the monthly computations of the average annual converter arsenic charging rate as calculated under § 61.174(f)(4). The annual report shall be postmarked by the 30th day following the end of each calendar year.

Subpart P—National Emission Standard for Inorganic Arsenic Emissions From Arsenic Trioxide and Metallic Arsenic Production Facilities

SOURCE: 51 FR 28033, Aug. 4, 1986, unless otherwise noted.

§ 61.180 Applicability and designation of sources.

The provisions of this subpart are applicable to each metallic arsenic production plant and to each arsenic trioxide plant that processes low-grade arsenic bearing materials by a roasting condensation process.

§ 61.181 Definitions.

All terms used in this subpart shall have the meanings given them in the Act, in subpart A of part 61, and in this section as follows:

Arsenic kitchen means a baffled brick chamber where inorganic arsenic vapors are cooled, condensed, and removed in a solid form.

Control device means the air pollution control equipment used to collect particulate matter emissions.

Curtail means to cease operations to the extent technically feasible to reduce emissions.

Inorganic arsenic means the oxides and other noncarbon compounds of the element arsenic included in particulate matter, vapors, and aerosols.

Malfunction means any sudden failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of inorganic arsenic are increased.

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

Primary emission control system means the hoods, enclosures, ducts, and control devices used to capture, convey, and remove particulate matter from exhaust gases which are captured directly at the source of generation.

Process emissions means inorganic arsenic emissions that are captured and collected in a primary emission control system.

Roasting means the use of a furnace to heat arsenic plant feed material for the purpose of eliminating a significant portion of the volatile materials contained in the feed.

Secondary emissions means inorganic arsenic emissions that escape capture by a primary emission control system.

Shutdown means the cessation of operation of a stationary source for any purpose.

[51 FR 28033, Aug. 4, 1986; 51 FR 35355, Oct. 3, 1986]

§ 61.182 Standard for new and existing sources.

(a) Within 30 days after the effective date of this subpart, the owner or operator of each source to which this subpart applies shall identify and submit to the Administrator a list of potential