ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2002–0058; FRL–6312–02–OAR]

RIN 2060–AU20

National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes amendments to the national emission standards for hazardous air pollutants (NESHAP) at major sources from new and existing industrial, commercial, and institutional (ICI) boilers and process heaters. Certain aspects of these standards were challenged and subsequently remanded to the Agency by the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit). This action finalizes amendments to several numeric emission limits for new and existing boilers and process heaters consistent with the court's opinion and sets compliance dates for these new emission limits. This action also provides further explanation of one aspect of the Agency's use of carbon monoxide (CO) as a surrogate for organic hazardous air pollutants (HAP) and its use of a CO threshold to represent the application of the maximum achievable control technology (MACT) for organic HAP. We are also finalizing several technical clarifications and corrections.

DATES: This final rule is effective on December 5, 2022. The incorporation by reference (IBR) of certain material listed in the rule is approved by the Director of the Federal Register as of October 6, 2022. The incorporation by reference of this material was previously approved by the Director of the Federal Register as of May 20, 2011.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Lisa Thompson, Sector Policies and Programs Division (D243–01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–9775; and email address: *thompson.lisa@epa.gov* or Nick Hutson, Sector Policies and Programs Division (D243–01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2968; and email address: *hutson.nick@epa.gov.*

SUPPLEMENTARY INFORMATION:

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPA–HQ–OAR–2002–0058. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *https://www.regulations.gov/.* Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are closed to the public, with limited exceptions, to reduce the risk of transmitting COVID–19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform.

Organization of this document. The information in this preamble is organized as follows:

I. General Information
- A. Executive Summary
- B. Does this action apply to me?
- C. Where can I get a copy of this document and other related information?
- D. Judicial Review and Administrative Reconsideration

II. Background

III. Summary of Final Action and Significant Changes Since Proposal
- A. Revisions to MACT Floor Emission Limits
- B. Beyond-the-Floor Emission Limits
- C. Revisions to Output-Based Emission Limits
- D. CO as a Surrogate for Organic HAP
- E. CO 130 PPM Threshold Emission Limits
- F. New Source Definition
- G. Approval for CO_2 in Lieu of O_2 Monitoring for CO CEMS Compliance Calculations

IV. Results and Final Decisions
- A. What are the resulting changes to emission limits?
- B. What compliance dates are we finalizing?
- C. What other actions are we finalizing?

V. Summary of Cost, Environmental, and Economic Impacts
- A. What are the affected sources?
- B. What are the air quality impacts?
- C. What are the cost impacts?
- D. What are the secondary impacts?
- E. What are the economic impacts?
- F. What are the benefits?
- G. What analysis of environmental justice did we conduct?

VI. Statutory and Executive Order Reviews
- A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act (PRA)
- C. Regulatory Flexibility Act (RFA)
- D. Unfunded Mandates Reform Act (UMRA)
- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
- G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
- H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act (NTTAA)
- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
- K. Congressional Review Act (CRA)

I. General Information

A. Executive Summary

1. Purpose of the Regulatory Action

a. Need for Regulatory Action

The NESHAP for Industrial, Commercial, and Institutional Boilers (ICI) and Process Heaters was promulgated on March 21, 2011 and amended on January 31, 2013 and again on November 20, 2015. Environmental groups and industry submitted petitions seeking judicial review of the 2013 NESHAP. On July 29, 2016, the D.C. Circuit remanded for further explanation the use of CO as a surrogate for organic HAP due to the EPA's failure to address a public comment received and vacated certain emission standards where it held that the EPA had improperly excluded certain units in establishing the emission standards. *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 631. On December 23, 2016, the D.C. Circuit amended its July 29, 2016 decision to remand those emission standards instead of vacating them. 844 F.3d 268. In March 2018, the court, in a separate challenge to the 2015 amended NESHAP, remanded for further explanation the EPA's decision to set a limit of 130 parts per million (ppm) CO as a minimum standard for certain subcategories of boilers and process heaters. *Sierra Club* v. *EPA,* 884 F.3d 1185.

In response to these remands, the EPA is finalizing revisions to several emission standards consistent with the court's opinion and providing further explanation of the two issues remanded for that purpose.

b. Legal Authority

The statutory authority for this final action is section 112 of the Clean Air Act (CAA). Section 112(d)(2) of the CAA directs the EPA to develop NESHAP which require existing and new major sources to control emissions of HAP using MACT based standards. This NESHAP applies to all ICI boilers and process heaters located at major sources of HAP emissions.[1]

2. Summary of the Major Provisions of the Regulatory Action in Question

The EPA is finalizing revisions to 34 different emission limits which it had previously promulgated in 2011 and amended in 2013. Of these 34 emission limits, 28 of the limits are more stringent and six of the limits are less stringent than the previously promulgated emission limits. The EPA is also finalizing a deadline of 3 years after the effective date of the final rule for sources to demonstrate compliance with these revised emission limits. A list of each combination of subcategory and pollutant with revised limits is shown in Table 1.

TABLE 1—SUMMARY OF SUBCATEGORIES WITH REVISED EMISSION LIMITS

Subcategory	Pollutant
New-Solid	HCl.
New-Dry Biomass Stoker	TSM.*
New-Biomass Fluidized Bed	CO, PM, TSM.
New-Biomass Suspension Burner	CO, TSM.*
New-Biomass Hybrid Suspension Grate.	CO.
New-Biomass Dutch Oven/Pile Burner.	PM.
New-Biomass Fuel Cell	PM.
New-Wet Biomass Stoker	CO, PM.
New-Liquid	HCl.
New-Heavy Liquid	PM, TSM.
New-Process Gas	PM.*
Existing-Solid	HCl, Hg.
Existing-Coal	PM.
Existing-Coal Stoker	CO.
Existing-Dry Biomass Stoker	TSM.*
Existing-Wet Biomass Stoker	CO, PM, TSM.
Existing-Biomass Fluidized Bed	CO, PM, TSM.
Existing-Biomass Suspension Burners.	PM, TSM.*
Existing-Biomass Dutch Oven/Pile Burner.	PM.
Existing-Liquid	Hg.
Existing-Heavy Liquid	PM.
Existing-Non-continental Liquid	PM.
Existing-Process Gas	PM.*

*Indicates a less stringent limit compared to the previously promulgated emission limits.

3. Costs and Benefits

We have estimated certain costs and benefits of the final rule, and these are found in Table 2. All of these estimates are in 2016 dollars (2016$). The monetized benefits estimate reflects an annual average of 446 tons of fine particulate matter ($PM_{2.5}$) emission reductions per year and 1,141 tons of sulfur dioxide (SO_2) emission reductions per year, both pollutants not directly regulated by this final rule. The unmonetized benefits include reduced exposure to directly regulated HAP, including mercury (Hg), hydrochloric acid (HCl), non-Hg metals (*e.g.,* antimony, cadmium), formaldehyde, benzene, and polycyclic organic matter; reduced climate effects due to reduced black carbon emissions; reduced ecosystem effects; and reduced visibility impairments. These estimates also include climate disbenefits resulting from an increase in carbon dioxide (CO_2) emissions, a secondary impact from electricity use by additional control devices in response to the final amendments.

Table 2 presents estimates of the present values (PV) and equivalent annualized values (EAV), calculated using discount rates of 3 and 7 percent as directed by OMB's Circular A–4, of the health benefits, climate disbenefits, compliance costs, and net benefits of the final rule, in 2016 dollars, discounted to 2020. The estimated net benefits are the estimated benefits minus the estimated disbenefits and the estimated costs of the final rule.

TABLE 2—ESTIMATED HEALTH BENEFITS, CLIMATE DISBENEFITS, COMPLIANCE COSTS, AND NET BENEFITS OF THE FINAL RULE, 2022 THROUGH 2029

[Millions 2016$, discounted to 2020][a]

	3% Discount rate	7% Discount rate
Present Value:		
Health Benefits[b]	$500 and $505	$350 and $353.
Climate Disbenefits[b]	$7	$7.
Compliance Costs[c]	$315	$265.
Net Benefits[d]	$178 and $182 + B	$80 and $83 + B.
Equivalent Annualized Value:		
Health Benefits	$71 and $72	$58 and $59.
Climate Disbenefits	$1	$1.
Compliance Costs	$45	$44.
Net Benefits	$25 and $26 + C	$13 and $14 + C.

[a] Numbers may not sum due to independent rounding.

[b] The health benefits are associated with several point estimates and are presented at real discount rates of 3 and 7 percent. The health benefits are a result of the $PM_{2.5}$ and SO_2 emission reductions estimated for this final rule, and are associated with several point estimates and are presented at real discount rates of 3 and 7 percent. The two benefits estimates are separated by the word "and" to signify that they are two separate estimates. The estimates do not represent lower- and upper-bound estimates and should not be summed. Data, resource, and methodological limitations prevented the EPA from monetizing the human health benefits from reduced exposure to mercury, HCl, and other HAP whose emissions are directly regulated by this final rule. The EPA provides a qualitative discussion of mercury, HCl, and other HAP benefits in the RIA. In addition, the potential benefits from reduced ecosystem effects and reduced visibility impairment from the reduction in emissions of non-HAP pollutants such as $PM_{2.5}$ and SO_2 are also not monetized here. Climate disbenefits are based on changes (increases) in CO_2 emissions and are calculated using four different estimates of the social cost of carbon ($SC–CO_2$) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate). For the presentational purposes of this table, we show the climate disbenefits associated with the average $SC–CO_2$ at a 3 percent discount rate, but the Agency does not have a single central $SC–CO_2$ point estimate. We emphasize the importance and value of considering the disbenefits calculated using all four $SC–CO_2$ estimates; the additional disbenefit estimates are presented in section V of this preamble. As discussed in Chapter 4 of the Regulatory Impact Analysis (RIA) for this final rule, a consideration of climate disbenefits calculated using discount rates below 3 percent, including 2 percent and lower, are also warranted when discounting intergenerational impacts.

[1] See 75 FR 32016 and § 63.7575 "What definitions apply to this subpart" of 40 CFR part 63, subpart DDDDD, for definitions of ICI boilers and process heaters.

[c] To estimate these annualized costs, the EPA uses a conventional and widely accepted approach, the equivalent uniform annual cost (EUAC) approach, that applies a capital recovery factor (CRF) multiplier to capital investments and adds that to the annual incremental operating expenses. Annual costs were calculated using a 5.5% nominal interest rate consistent with the rate used for the cost analysis done for the proposed rule.

[d] The letter "B" captures the portion of the present value of net benefits due to the unmonetized benefits from the emission reductions of directly regulated HAP and all other emission changes resulting from this final rule. The letter "C" captures the portion of the equivalent annualized value of net benefits due to the unmonetized benefits from the emission reductions of directly regulated HAP and all other emission changes resulting from this final rule. The benefits from emission reductions of directly regulated HAP under this final rule are not monetized due to lack of appropriate valuation estimates. More information on the unmonetized benefits from HAP and non-HAP emission reductions can be found in Chapter 4 of the RIA.

As shown in Table 2, the PV of the health benefits of this final rule, discounted at a 3-percent discount rate, is estimated to be about $500 million and $505 million, with an EAV of about $71 million and $72 million. At a 7-percent discount rate, the PV of the health benefits is estimated to be $350 million and $353 million, with an EAV of about $58 million and $59 million. The two health benefits estimates for each discount rate reflect alternative $PM_{2.5}$ mortality risk estimates. The PV of the climate disbenefits of this final rule, discounted at a 3-percent rate, is estimated to be about $7 million, with an EAV of about $1 million. The PV of the compliance costs, discounted at a 3-percent rate, is estimated to be about $315 million, with an EAV of about $45 million. At a 7-percent discount rate, the PV of the compliance costs is estimated to be about $265 million, with an EAV of about $44 million.

More information on these impacts can be found in section V of this preamble and in the Regulatory Impact Analysis (RIA) for this final rule.

B. Does this action apply to me?

Table 3 lists the NESHAP and associated regulated industrial source categories that are the subject of this action. Table 3 is not intended to be exhaustive, but rather provides a guide for readers regarding the entities that this action affects. The final standards will be directly applicable to the affected sources. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576, July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (see EPA–450/3–91–030, July 1992), the Industrial/Commercial Boiler source category includes boilers used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity. The Institutional/Commercial Boilers source category includes, but is not limited to, boilers used in commercial establishments, medical centers, research centers, institutions of higher education, hotels, and laundries to provide electricity, steam, and/or hot water. Waste heat boilers are excluded from this definition. The Process Heaters source category includes, but is not limited to, secondary metals process heaters, and petroleum and chemical industry process heaters. A process heater is defined as an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (*e.g.,* glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Waste heat process heaters are excluded from this definition. A boiler or process heater combusting solid waste is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the CAA.

TABLE 3—SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

Source category	NESHAP	NAICS code [1]	Examples of regulated entities
Any industry using a boiler or process heater as defined in the final rule.	Industrial, Commercial, and Institutional Boilers and Process Heaters.	211	Extractors of crude petroleum and natural gas.
		321	Manufacturers of lumber and wood products.
		322	Pulp and paper mills.
		325	Chemical manufacturers.
		324	Petroleum refineries, and manufacturers of coal products.
		316, 326, 339	Manufacturers of rubber and miscellaneous plastic products.
		331	Steel works, blast furnaces.
		332	Electroplating, plating, polishing, anodizing, and coloring.
		336	Manufacturers of motor vehicle parts and accessories.
		221	Electric, gas, and sanitary services.
		622	Health services.
		611	Educational services.

[1] North American Industry Classification System.

C. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at *https://www.epa.gov/stationary-sources-air-pollution/industrial-commercial-and-institutional-boilers-and-process-heaters.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the action and key technical documents at this same website.

A redline version of the regulatory language that incorporates the finalized changes in this action is available in the docket for this action (Docket ID No. EPA–HQ–OAR–2002–0058).

D. Judicial Review and Administrative Reconsideration

Under CAA section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by December 5, 2022. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal

proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

On March 21, 2011, the EPA established final emission standards for ICI boilers and process heaters at major sources, reflecting the application of the maximum achievable control technology (MACT) (76 FR 15608). On January 31, 2013, the EPA promulgated final amendments (78 FR 7138), which were challenged by industry and environmental petitioners. On November 20, 2015, the EPA promulgated additional amendments (80 FR 72789) in response to certain reconsideration issues.

On July 29, 2016, the D.C. Circuit issued its decision in *U.S. Sugar Corp* v. *EPA.* In that decision, the court upheld the EPA's 2013 final rule against all challenges brought by industry petitioners, and virtually all challenges brought by environmental petitioners. However, the court vacated the MACT floor emission limits for those subcategories where the EPA had excluded certain units from its MACT-floor calculation because those units burned less than 90 percent of the subcategory defining fuel. *U.S. Sugar Corp.* v. *EPA,* 830 F.3d at 631. As the court explained, ''[a]lthough the EPA allowed sources that combust only *10 per cent* of a subcategory defining fuel to join that subcategory, it declined to consider emissions from any source that burned *less than 90 per cent* of the subcategory-defining fuel when determining the average emissions level of the best performing sources in setting MACT floors for existing sources. And when it set a subcategory's MACT floors for new sources, the Agency declined to consider the emissions levels from any source that did not burn *100 per cent* of the fuel.'' *Id.* Because of this, ''several sources excluded from the MACT floor determination were among the best performing sources (or, in some cases, the single best performing source) in that fuel-based subcategory.'' *Id.* The court concluded that because the Clean Air Act requires the EPA to ''set the MACT floor at the level achieved by the best performing source, or the average of the best performing sources, in a subcategory,'' when ''the EPA includes a source in a subcategory, it must take into account that source's emissions levels in setting the MACT floor,'' no matter what percentage of subcategory-defining fuel that source burns. The D.C. Circuit therefore ''vacate[d] the MACT standards for all major boiler subcategories that would have been affected had the EPA considered all sources included in the subcategories.'' *Id.* at 632.

The D.C. Circuit subsequently granted EPA's motion for rehearing on remedy, withdrew its vacatur, and instead remanded for the EPA ''to identify those standards for which the MACT floor would have differed if the EPA had included all best-performing sources in each subcategory in its MACT-floor analysis'' and to ''revise those standards consistent with our July 29, 2016 opinion in this case.'' 844 F.3d at 270. Therefore, these standards have remained in effect since the court's decision.

The court in *U.S. Sugar* also remanded the use of CO as a surrogate for non-dioxin organic HAP to the EPA for the limited purpose of addressing public comments on the potential availability of post-combustion control technologies that could control CO. *Id.* at 628–30. As the D.C. Circuit explained, ''the EPA used carbon monoxide (CO) as a surrogate for several non-dioxin/furan organic HAPs when the Agency set the MACT floors for major boilers. In support of this approach, the EPA found that both CO and these HAPs were the products of 'incomplete combustion.' The Agency concluded as a result that CO was a reasonable surrogate because: (1) minimizing CO emissions would minimize these HAPs; (2) methods used for the control of these HAP emissions would be the same methods used to control CO emissions (*i.e.,* good combustion or using an oxidation catalyst); (3) standards limiting CO emissions would result in decreases in these HAP emissions; and (4) establishing emission limits for individual organic HAPs would be impractical and costly.'' *Id.* at 628 (citing 2010 Proposed Major Boilers Rule, 75 FR 32018). The environmental petitioners argued ''that the EPA has not adequately explained how setting emission standards for CO will . . . set emission standards for organic HAPs at the average level achieved by the best performers with regard to those HAPs.'' *Id.* The D.C. Circuit agreed, concluding that ''during notice and comment, the EPA failed to directly consider and respond to several comments that introduced evidence suggesting that other control technologies and methods could be effectively used to reduce HAP emissions without also impacting CO emissions, or vice versa.'' *Id.* at 629.

In a subsequent decision on March 16, 2018, the D.C. Circuit remanded the EPA's decision to set a limit of 130 ppm CO as a surrogate for non-dioxin organic HAP for certain subcategories, asking the Agency to better explain its analysis supporting its decision. *Sierra Club* v. *EPA,* 884 F.3d 1185. As the D.C. Circuit explained, in promulgating ''regulations that indirectly control a group of organic pollutants by limiting carbon monoxide emissions as a proxy for the targeted pollutants,'' and ''[a]fter calculating emissions limits for the organic pollutants by reference to the amount of carbon monoxide emitted by the best performing boilers in each subcategory, EPA concluded that the lowest of the carbon monoxide limits were too low, so it substituted a single, higher limit that it deemed sufficient to control the pollutants.'' *Id.* at 1189. The D.C. Circuit concluded that the ''EPA did not adequately justify its change of direction on the carbon monoxide limits because it failed to explain how the revised limits would minimize the targeted pollutants to the extent the Clean Air Act requires.'' *Id.* On August 24, 2020, the EPA published a notice of proposed rulemaking (NPRM) to address these issues remanded by the D.C. Circuit, and to make several technical clarifications and corrections (85 FR 52198). Section 112 of the CAA establishes a regulatory process to address emissions of hazardous air pollutants (HAP) from stationary sources. CAA section 112(d) requires the Agency to promulgate technology-based national emission standards for hazardous air pollutants (NESHAP) for major sources. ''Major sources'' are

defined in CAA section 112(a) as sources that emit or have the potential to emit 10 tons or more per year (tpy) of a single HAP or 25 tpy or more of any combination of HAP. For major sources, the technology-based NESHAP must require the maximum degree of reduction in emissions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts). These standards are commonly referred to as MACT standards.

The MACT ''floor'' is the minimum control level allowed for MACT standards promulgated under CAA section 112(d)(3) and may not be based on cost considerations. For new sources, the MACT floor cannot be less stringent than the emissions control that is achieved in practice by the best controlled similar source. The MACT floor for existing sources may be less stringent than floors for new sources but may not be less stringent than the average emissions limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT standards, the EPA must also consider control options that are more stringent than the floor (*i.e.,* ''beyond-the-floor'' options) under CAA section 112(d)(2). The EPA may establish beyond-the-floor standards more stringent than the floor based on considerations of the cost of achieving the emission reductions, any non-air quality health and environmental impacts, and energy requirements.

III. Summary of Final Action and Significant Changes Since Proposal

In this action, we are finalizing amendments to certain emission limits for new and existing boilers and process heaters. Most of these changes are identical to the emission limits that were proposed. As discussed further below at sections III.A.3 (HCl) and III.A.4 (PM), three of the emission limits have been revised since proposal following consideration of public comments received—New-Solid (HCl), New-Liquid (HCl), and Existing-Biomass Fluidized Bed (PM). We are also providing additional explanation to support the use of CO as a surrogate for organic HAP and to set a minimum CO emission limit of 130 ppm. In addition, we are finalizing approval of an alternative monitoring provision allowing for use of CO_2 as a diluent in lieu of O_2 when a continuous emission monitoring system (CEMS) is used to comply with an emission limit. We are also finalizing a small number of technical corrections based on our proposed action and our consideration of public comments received.

A. Revisions to MACT Floor Emission Limits

On July 29, 2016, the D.C. Circuit issued its decision in *U.S. Sugar Corp* v. *EPA.* In that decision, the court vacated those MACT limits where it held that the EPA had improperly excluded certain units in establishing the emission standards. Specifically, the court vacated all MACT limits where the EPA had included certain units in a subcategory but excluded those same units from its assessment of the subcategory's best performing sources. On December 23, 2016, the D.C. Circuit amended its July 29, 2016 decision, remanding those limits instead of vacating them, and ordering the Agency ''to identify those standards for which the MACT floor would have differed if the EPA had included all best-performing sources in each subcategory in its MACT-floor analysis'' and to ''revise those standards consistent with our July 29, 2016 opinion in this case.'' 844 F.3d at 270.

Prior to the *U.S. Sugar* decision, on August 20, 2013, the D.C. Circuit issued its decision in *National Ass'n. of Clean Water Agencies (NACWA)* v. *EPA,* which addressed challenges to the EPA's 2011 Sewage Sludge Incinerator (SSI) rule, issued under section 129 of the CAA. In *NACWA* v. *EPA,* the court remanded the EPA's use of the upper prediction limit (UPL) methodology to the Agency for further explanation of how the methodology reflected the average emissions limitation achieved by the best-performing 12 percent of sources (for existing sources) and the average emissions limitation achieved by the best-performing similar source (for new sources). *NACWA* v. *EPA,* 734 F.3d 1115, 1151. Because the UPL methodology used in the SSI rule was the same as that used in the Boiler Rule, the EPA requested a remand of the record in *U.S. Sugar* v. *EPA* in order to address the court's decision in *NACWA* v. *EPA.* The EPA prepared a memorandum explaining the methodology for the UPL, *EPA's Response to Remand of the Record for Major Source Boilers,*[2] that provided a detailed rationale to use the UPL as the basis of setting a MACT floor for new and existing sources. The methodology and the explanation in the memorandum were upheld by the D.C. Circuit in *U.S. Sugar* v. *EPA.* 830 F.3d at 639.

Accordingly, the EPA is finalizing changes to emission limits for new and existing boilers and process heaters. These changes address the court's concern regarding co-firing units that were included in a subcategory but excluded from consideration of that subcategory's best-performing sources in the 2013 analysis. In addition, these changes apply the UPL to the MACT floor analysis for limited datasets as explained in EPA's August 2019, memorandum titled ''Approach for Applying the Upper Prediction Limit to Limited Datasets for Boilers and Process Heaters at Major Sources.''

1. Overarching Methodology and Dataset Basis

In the 2020 proposal, the EPA based its revised analysis to address the remand on the same dataset used as the basis for the 2013 final rule.[3] [4] The 2013 final rule incorporated electronic reporting requirements into the rule. As a result, numerous emission test reports and other compliance data are now available through the Compliance and Emissions Data Reporting Interface (CEDRI) and WebFIRE.[5] However, since the revisions to the MACT floor analysis were conducted solely to address the remand in *U.S. Sugar* by correcting the calculations the court found impermissible, the EPA did not update its dataset to incorporate CEDRI compliance data into its revised MACT floor analysis.

While the EPA proposed to maintain the same dataset basis as the 2013 rule, the revisions to the rankings of emissions information to identify the best-performing units to include in the MACT floor calculation [6] required that the EPA conduct a more detailed review of the data available for the units in the dataset that had previously been excluded from the rankings, focusing on the newly identified best performers in

[2] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3892.

[3] See 85 FR 52203.

[4] Emissions Database for Boilers and Process Heaters Containing Stack Test, CEM, and Fuel Analysis Data Reporting under ICR No. 2286.01 and ICR No.2286.03 (OMB Control Number 2060–0616) (version 8). See Docket ID Item No. EPA–HQ–OAR–2002–0058–3830.

[5] U.S. Environmental Protection Agency. Compliance and Emissions Data Reporting Interface (CEDRI) *https://www.epa.gov/electronic-reporting-air-emissions/cedri* and WebFIRE database *https://www.epa.gov/electronic-reporting-air-emissions/webfire.*

[6] See Docket ID Item No. EPA–HQ–OAR–2002–0058–0815 for background on how the EPA calculates MACT emission limits, along with the docketed memorandum, *Revised MACT Floor Analysis (2021) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source.*

the 2020 proposal. While reviewing the underlying emissions test reports, the EPA corrected some database errors, filled information gaps on relative heat inputs from individual fuel types for certain co-fired fuel blends in order to verify that units did indeed belong to a specific fuel subcategory based on background combustion process information provided in the test reports or database fuel heat input background tables, and adjusted CO instrument span measurements since some of the revised rankings showed test run values that were incorrectly reported as zero, non-detect, or negative in the database. The CO instrument span establishes the appropriate representative detection level (RDL) to use in the MACT floor calculations and the underlying emissions test reports in the record typically contained the span information. In some cases, when the span information was not available, default span values were assigned as discussed in the memorandum, *Incorporating Measurement Error in Reported Carbon Monoxide (CO) and Total Hydrocarbon (THC) Data (Revised August 2012).*[7] These adjustments were needed to ensure that we could use the data from the newly identified best performers. Had these units been identified as best performers in the original rulemaking, the EPA would have conducted a similar review of the test data and made the same corrections and adjustments. These data had not been previously scrutinized since they were not used in the original UPL calculations. While corrections were made to the original dataset for the purposes of revising UPL calculations for this final rule, no recent compliance data after January 31, 2013 (*e.g.,* emission test reports and other compliance data available through CEDRI and WebFIRE) were incorporated into the rankings or UPL calculations for these final MACT floor emission standards, for the reasons explained later in this subsection.

Commenters both agreed and disagreed with the EPA's use of the original 2013 dataset for this reanalysis of the emission limits. Some commenters provided limited, specific examples of where they believed additional data should be incorporated to provide additional emission test run variability in cases where there are limited datasets. However, these same commenters also agreed that EPA's use of the 2013 dataset is reasonable. These commenters pointed out that the court's decision in *U.S. Sugar* directed the EPA to correct its analysis of the 2013 dataset that established the emissions standards, not to collect new data.

Another commenter disagreed with the proposed approach to base the revisions to the MACT floor analysis on data from the 2013 final rule. The commenter claims the data is obsolete and ignores several years of compliance data available in CEDRI. This commenter did not dispute the EPA's methodology in calculating revised MACT standards consistent with the D.C. Circuit's opinion in *U.S. Sugar* v. *EPA*. The commenter's criticism was that the EPA should have considered additional data beyond those contained in the 2013 database for the remanded rule, and they claimed that, in fact, section 112(d) of the CAA requires the Agency to consider compliance data in its action on remand.

Another commenter also requested that the EPA consider certain additional data. The commenter stated that, ''it is appropriate to include only information that is relevant for setting the floor or identifying appropriate variability and exclude data that represents post-promulgation changes made to existing sources,'' [8] and that including the latter data would inappropriately redefine a standard based on actions taken to comply with such standard. However, the commenter believes that the EPA should not ignore units for which it has emissions information without justifying why the result from more limited data is sufficient. The commenter cites section 112(d)(3)(A) of the CAA, which requires that the MACT floor be no less stringent than the average emission limitation achieved by the best performing 12 percent of the existing sources for which the Administrator has emissions information.

The commenters claiming that the EPA must consider on remand additional data beyond the 2013 dataset that was used to establish the 2013 standards which were before the court misconstrue the D.C. Circuit's instructions in its decision remanding those standards to the EPA. The court stated that on remand, the EPA must ''identify those standards for which the MACT floor would have differed if the EPA had included all best-performing sources in each subcategory in its MACT-floor analysis.'' *U.S. Sugar* v. *EPA,* 844 F.3d 268 (2016) (granting EPA's motion for rehearing). The court further instructed the EPA to ''revise those standards consistent with'' the court's opinion. *Id.* Nothing in the court's opinion or in its grant of rehearing instructs or requires the EPA to initiate a new standard-setting process or to assemble additional data. Rather, the remand was targeted to *only* those standards affected by the court's decision, and the court did not address the question of whether the EPA should—let alone must—consider data that did not exist at the time the challenged rule was issued. In contrast, the D.C. Circuit vacated—rather than remanded—the EPA's 2004 emissions standards for commercial and industrial boilers because it anticipated a ''wholesale revision'' of the rule would be required. *NRDC* v. *EPA,* 489 F.3d 1250, 1262 (2007). Here, the court neither vacated the standards, nor indicated that it anticipated consideration of additional data.

The EPA further disagrees that section 112(d)(3)(A)'s reference to sources ''for which the Administrator has emissions information'' requires consideration of additional data beyond the 2013 dataset, such as compliance data. That qualifying language is intended to ensure that the EPA need not obtain emissions data from 100 percent of the source category or subcategory in order to identify the best performing 12 percent of the source category, consistent with the overall Congressional intent in enacting the 1990 amendments to section 112 to prevent delay in regulating emissions of hazardous air pollutants. Rather, the EPA could identify the best performing 12 percent of the sources for which it had emissions data, even if the Agency did not have emissions data for all the sources in the source category or subcategory and could set standards on that basis without having to collect information from all sources. In other words, the language the commenter refers to does not compel collection or consideration of additional data, particularly here, where the EPA is revising standards solely in response to a court remand on a very specific, limited issue. The EPA further notes that some commenters would have the EPA selectively consider additional data, such as data showing additional variability. For example, one commenter claims that the EPA must consider compliance data only for the purpose of accounting for variability, but not otherwise. The EPA does not agree that it would be reasonable or appropriate to consider compliance data only to account for additional variability. Where the EPA uses data for the UPL calculation, it uses that data for purposes of calculating the floor as well as for accounting for variability, and it

[7] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3833.

[8] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3969.

would not be appropriate to take a different approach here. As explained above, in this action the EPA is only correcting the flaw in its 2013 final rule analysis identified by the *U.S. Sugar* court in response to the court's remand. Further, while this action is limited to the remand, the Agency disagrees that, as a general matter, data representing compliance actions taken by sources to meet a previous standard are necessarily inappropriate to consider when revising a standard. However, that question is not at issue here.

The EPA's approach is reasonable given the limited nature of the remand. In addition, if the EPA were to revise the affected standards using newer emissions information, it could result in the potentially inequitable outcome of some units being subject to more stringent standards solely because of the EPA's error in its initial MACT floor calculations, while other units unaffected by the court decision would remain unchanged. Revising all of the boiler MACT standards, including the standards that have not been remanded, would require EPA to incur a significant resource burden and could result in wholesale changes to standards that were largely upheld by the D.C. Circuit. Given its other obligations under the statute and the EPA's determination that using new data is unnecessary to respond to the remand, the EPA has chosen to maintain the original data set for purposes of calculating standards. The revisions incorporate the co-fired boilers that met the subcategory definition using a threshold of at least 10 percent of a subcategory-defining fuel, on an annual heat input basis, but were excluded from the ranking analysis in the 2013 final emission standards. The D.C. Circuit in *U.S. Sugar* stated that, if the EPA includes a source in a subcategory, it must consider whether any source in that subcategory is a best-performing source which would then need to be accounted for in setting the MACT floor. *U.S. Sugar* v. *EPA,* 830 F.3d at 631. The final standards fully incorporate these sources in the development of standards as required by the remand.

2. UPL Methodology for Limited Datasets

Some of the MACT floor emission limits the EPA proposed were based on datasets with less than 7 test runs (''limited datasets''). There were limited datasets for the following subcategories and pollutants for both existing and new sources: process gas (Hg, HCl, total selected metals (TSM), and PM), biomass suspension burner (TSM), dry biomass stoker (TSM, PM, and CO), and coal fluidized bed coal refuse (CO). Limited datasets also existed for the following subcategories and pollutants for new sources: solid (Hg and HCl), liquid (Hg and HCl), heavy liquid (TSM and PM), light liquid (TSM and PM), biomass dutch oven/pile burner (TSM), biomass fuel cell (TSM), biomass fluidized bed (TSM), biomass suspension burner (TSM), biomass suspension grate (CO), wet biomass stoker (TSM), and coal (TSM and PM). On remand, these limited datasets were reviewed in additional detail to determine whether it was appropriate to make any modifications to the UPL approach used to calculate the MACT floors.

In addition to the proposed MACT floors involving limited datasets, the EPA also conducted a similar, more detailed review of the new source standards to evaluate if the UPL calculations required any adjustments to ensure that the resulting emission standards for new sources were not less stringent than for existing sources. Based on this review, the EPA found that the revised emission limits for three new source subcategories and pollutants did not reasonably account for variability and some changes were made to be consistent with *EPA's Approach for Applying the Upper Prediction Limit to Limited Dataset Boiler and Process Heaters at Major Sources*[9] to avoid the anomalous result the Court identified in *NACWA* v. *EPA* [10] where the calculated new source floor was less stringent than the existing source floor: These new source subcategories and pollutants are the following: solid (HCl), wet biomass stokers (TSM, PM), and biomass fluidized beds (PM).

The only comments received on the proposed methodology for analyzing limited datasets were made in the context of the new source solid fuel HCl emission limit. Those comments are summarized in section III.A.3 of this preamble.

The EPA is finalizing limited revisions to certain standards to address the specific issue identified by the court in *NACWA* v. *EPA.* The EPA is finalizing, as proposed, adjustments needed to three new source standards—Solid (HCl) and wet biomass stokers (TSM, PM), and biomass fluidized beds (PM)—to ensure that the new source floor is no less stringent than the existing source floor.[11] Additional detail about the determinations made at proposal are discussed in the docketed memorandum and no further analyses were needed as part of the final rule.[12]

3. Solid and Liquid Fuel HCl Emission Limits for New Sources

The proposed emission limits for HCl in the new source solid fuel and liquid fuel subcategories were both based on a value equal to 3 times the representative detection level (RDL) because the calculated UPL from the best performing similar source was less than this value.[13] In each case, the RDL value established for these two subcategories was based on the sampling times of the single best performer in each subcategory. For HCl, the detection level decreases with longer sampling times. For liquid fuels, the best performer had a 4-hour stack test, resulting in a 3 times RDL (3x RDL) of 5.4E–05 lb/MMBtu. For solid fuels, the best performer had a 1-hour stack test with an average oxygen concentration of 10.2 percent, resulting in a 3x RDL of 3.0E–04 lb/MMBtu.

In the case of liquid fuel boilers, the 3x RDL value was multiplied by a fuel variability factor to establish the MACT floor because the best performing unit had paired test data and fuel analysis data [14] to compare to fuel analysis used at the unit over time. The EPA also reviewed the data for the best performer in additional detail given that this best performing unit, ''LAShellChemicaGeismar, Furnace F–S801,'' had a limited dataset of 3 test runs. The EPA concluded that this unit was indeed a best performing unit.[15]

In the case of solid fuel boilers, the EPA proposed that the unit with the second lowest emission test results but the lowest variability, ''TXDibollTemple-Inland, PB–44'' (PB–44) was the best performing similar source.[16] This unit did not have paired test data and fuel analysis data to develop an appropriate fuel variability factor, so no fuel variability factor was applied to this emission limit.

[9] *See* Docket ID Item No. EPA–HQ–OAR–2002–0058–3946.

[10] *See National Assn. of Clean Water Agencies* v. *EPA (NACWA)* 734 F 3d 1115.

[11] See 85 FR 52205–52207.

[12] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3946.

[13] In cases where the calculated UPL value is less than three times the representative detection level (3x RDL), where the RDL is the average detection level of the best performing sources, the limit is determined to be equivalent to the 3x RDL value. Such a limit ensures measurement variability is addressed and provides a limit that has a measurement imprecision similar to other EPA test methods.

[14] Paired fuel and testing data means that there is an analysis of the fuel that was being utilized during the emissions testing. Unpaired fuel data may be representative of fuel burned at the unit, but not specifically the fuel burned during the emissions testing.

[15] See 85 FR 52206.

[16] Ibid.

Comment: Two commenters stated that the 3x RDL emission limit for HCl should have been calculated differently. One of the commenters provided specific suggestions, indicating they believed it is not appropriate for the EPA to set a RDL based on the operation of the top performing boiler alone. The commenter suggested that a more representative approach to setting a detection limit would be to derive an RDL associated with all non-detect emission tests for the best-performing units in the subcategory.

Response: The EPA agrees with the commenter that sample time data should be analyzed for the entire top 12 percent of units, not just the single best performer. However, the EPA disagrees with the commenter's suggested approach which considers only data that were reported as non-detect (*i.e.,* the emissions results were below the detection level of the instrumentation) instead of all available reported pollutant-specific method detection levels from the best performing units in each subcategory. As we stated in the docketed memorandum, *Data and Procedure for Handling Below Detection Level Data in Analyzing Various Pollutant Emissions Databases for MACT and RTR Emission Limits (Revised 2012),* our approach, ''minimizes . . . effect of a test(s) with an inordinately high method detection level (*e.g.,* the sample volume was too small, the laboratory technique was insufficiently sensitive, or the procedure for determining the minimum value for reporting was other than the detection level).'' [17]

Therefore, the EPA revised the 3x RDL values for new source solid and new source liquid HCl 3x RDL to reflect data from the top 12 percent of boilers. The data were pulled from the 2013 dataset and supporting test report files from the docket from the 2013 final rule. Revised data and analysis for the 3x RDL values are found in the docketed memorandum *Revised (2021) Analysis of Minimum Detection Levels from Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source.* The revised methodology and changes to the underlying data used for the 3x RDL calculations resulted in a 30 percent lower 3x RDL value than what was proposed for solid fuels, with the 3x RDL decreasing from 3.0E–04 to 2.1E–04 lb/MMBtu. For liquid fuels, the revised 3x RDL value is 122 percent higher than what we proposed, increasing from 5.4E–05 to 1.2E–04 lb/MMBtu.

Comment: Several commenters disagreed with the EPA's approach and rationale for selecting PB–44 as the best performing source for new solid fuel units, arguing that the solid fuel HCl limit calculations need to better account for natural variability in biomass fuel chloride levels as well as operational variability. Commenters noted that PB–44 only has a single three run test and it has a homogenous dry biomass fuel, sourced from on-site particleboard byproducts.

Commenters differed in their suggestions for what unit should be the best performing similar source. Some commenters suggested that Wellons Boiler was the best performing boiler, despite the larger variance in its HCl emissions. Some commenters made suggestions on how to adjust the Wellons Boiler data with additional data outside of the 2013 dataset. Other commenters suggested that other units in the top 12 percent for existing solid fuel HCl best performers were better choices than PB–44.

With regards to fuel variability, some commenters noted that PB–44 has only three test runs available and that a dataset with six test runs is superior to a dataset with three. One commenter also added that both PB–44 and Wellons Boiler do not have any HCl add-on control devices and the variation in emissions is directly related to fuel chloride content. The commenter argued that if the EPA had more data for PB–44, the variability in its HCl emission rates might be much higher and noted that variability can be determined more accurately with more test runs. This commenter also emphasized that the emissions of HCl at the lowest emitting unit are related to chloride variability in the fuel and not to the performance of any add-on control device. The commenter suggested several ways to better incorporate chloride variability in biomass fuels in its detailed comments.

One commenter further disagreed with the EPA's selection of PB–44 which had the second lowest emission test as the best performing similar source in its limited dataset analysis because it has lower variance in test results. The commenter suggested that variance is not the only consideration in the selection of a best performing similar source, especially where emissions are dictated by the fuel chloride variability and not by the use of a control device. This commenter also suggested that the EPA's selection of PB–44 to establish the new-source floor directly contradicts its assessment of long-term fuel variability by ignoring data related to fuel variability the Agency had previously argued was necessary. This commenter also suggested that the EPA's decision to finalize a standard based on limited dataset with only the UPL adjustment would be arbitrary, given that the fuel content must be taken into account to determine the emissions level that boiler actually achieved every day and under all operating conditions.

Response: The EPA disagrees with commenters that the PB–44 unit does not reflect the emissions control that is achieved in practice by the best controlled similar source. As discussed in section III.A of this preamble, the court remanded for further explanation the UPL methodology in *NACWA* v. *EPA,* in part for the EPA to explain how the UPL was appropriate for limited data sets in the face of the ''apparently illogical'' results where the emission limit for new sources was less stringent than the emission limit for existing sources. *NACWA* v *EPA,* 734 F.3d at 1144. Following the *NACWA* decision, the EPA issued the UPL memo and the limited data sets memo to provide the explanations requested by the court, and both approaches have been subsequently upheld by the D.C. Circuit. The EPA has applied the UPL and the limited data set approach in calculating the solid fuel HCl limit. The EPA could not determine that the Wellons Boiler, which commenters point out has more test runs available than the PB–44 unit, was the best performing similar source because it yielded the same ''apparently illogical'' result that the *NACWA* court questioned, *i.e.,* a new source limit that would be less stringent than the corresponding existing source limit, due to the variance in its data. In such circumstances, the EPA's limited data set approach provides that the EPA will further evaluate the individual dataset to ensure that the uncertainty associated with it does not cause the emissions limit to be so high that it does not reflect the emissions performance of the best performing similar source, for new source MACT standards.

Moreover, the EPA has broad discretion to identify best performing sources, and it is reasonable to consider variability in emissions when choosing the ''best'' sources from an emissions perspective. For example, a source could have the lowest average emissions level based on a single very low data point, but other very high emissions points. It is reasonable for the EPA to consider, in that circumstance, that a second source with a slightly higher average emissions level but consistently low emissions is a ''better'' performer

[17] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3839.

than the first source. Consistent with the previous MACT floor methodology, the EPA has determined that MACT floors based on a single source must be based on at least three runs of test data to ensure that adequate variability can be incorporated. The EPA has not thrown out other MACT floor emission limits that are based on a single three run test.[18] PB–44 has three valid test runs and it is the unit with the second lowest emissions test average results but has a variance that is 5 times lower than the Wellons boiler, and it did not yield a new source limit that is less stringent than the existing source limit. Therefore the EPA continues to conclude PB–44 is the best performing similar source for new solid fuel units.

The EPA further disagrees with commenters that it should incorporate fuel variability into the revised emission limit by evaluating fuel variability from other units in the 2013 dataset. We have previously stated that we can only apply a fuel variability factor when we have paired test data and fuel analysis data.[19] PB–44 had no paired fuel analysis data with its single 3-run HCl emission test in the 2013 dataset, so a fuel variability factor could not be developed according to the historical methodology used in the Boiler Rule.

The solid fuel subcategory encompasses a wide variety of boilers and process heaters and many of these units have achieved this emission level in practice, though each unit, depending on facility- and unit-specific circumstances, may employ different fuel blends and control devices to do so. Both the revised CEDRI compliance dataset and the 2013 dataset used to establish the MACT floor calculations present several examples of units in the solid fuel subcategory that have achieved this limit in practice. According to compliance data submitted to EPA via CEDRI through December 31, 2020, most of the new units in the solid fuel subcategory are meeting this more stringent emission limit that is based on a 3x RDL value.[20] Of the new units with test data, 71 percent (10 of the 14 units with HCl compliance test data) are meeting the revised 3x RDL value.

The EPA also disagrees with some of the commenter suggestions to bring in new data from outside the 2013 dataset to serve a targeted purpose for this single subcategory. The EPA explains earlier in this document why the Agency is not required to consider new data for purposes of this action.

4. Biomass Fluidized Bed PM Emission Limits for Existing and New Sources

For existing biomass fluidized beds, we proposed to make the PM emission limit more stringent, decreasing from 1.1E–01 to 2.1E–02 lb/MMBtu. The existing source floor was based on the top 5 units in the subcategory since the subcategory had fewer than 30 sources. The units that were part of the top 5 changed after we re-ranked the data to address the *U.S. Sugar* remand.

For new biomass fluidized beds, we also proposed to make the PM emission limit more stringent, decreasing from 9.8E–03 to 4.1E–03 lb/MMBtu. The unit with the lowest minimum test average was "ORGeorgiaPacificWaunaMill, EU35—Fluidized Bed Boiler" (Wauna boiler). The Wauna boiler had six separate tests in the boiler dataset. However, the calculated UPL for the Wauna boiler was 3.2E–02 lb/MMBtu, which exceeded the UPL calculated for existing units in the same subcategory, which was 2.1E–02. Since the new source floor was less stringent than the existing source floor, the EPA reviewed the data further to evaluate if the unit truly reflected the best controlled similar source and to evaluate if the UPL calculations required any adjustments to ensure that the UPL did not result in a less stringent standard for new sources. The EPA conducted additional analysis and determined that the unit with the second lowest minimum test, "WIGPGreenBay2818, B10—Wastepaper Sludge-Fired Boiler 10" (B10), was the best controlled similar source because it had a variance three orders of magnitude lower than the Wauna boiler and did not yield a limit less stringent than the existing source limit.

Comment: One commenter noted that the EPA included 15 p.m. emission tests for the unit LAGPPortHudson, EQT0109—No. 6 CFB Boiler (Port Hudson boiler), including two 2007 tests in which the dry scrubber was off for one test and on for the other, and the EPA only included data from the test where the scrubber was off in the UPL calculations. The commenter stated that both tests should be included in the UPL calculations.

Response: We reviewed the docket record to evaluate the commenter's concerns with the test runs included for the Port Hudson boiler. The Port Hudson boiler had five different tests included in the UPL calculations at proposal. Four of the five tests, dated September 11, 2007, December 18, 2008, December 19, 2008, and July 29, 2009, were all conducted with the sorbent injection system control device operating. The fifth test in August 2007 was conducted with the scrubber control device off. Given that the scrubber operating reflected the more common unit operations, we also evaluated CEDRI data for the purpose of verifying that the unit typically operates with its sorbent injection system operating. We disagree with the commenter that we should use the tests from August 2007 with both the sorbent injection control operating as well as off. Since this unit typically operates the sorbent injection system control device, only the tests conducted while this control device is operated are representative of the emission levels and typical operations employed by this source. Introducing statistical variability in UPL calculations by mixing test results for different control configurations would be inconsistent with the MACT floor methodology[21] since the unit typically conducts its compliance testing with the control system operating. When we evaluated the August 2007 test report available in the docket in more detail, we found that the August 2007 test report had four different test scenarios. Scenario 1 and 2 were the only scenarios firing biomass fuels (both fired a combination of biomass and petroleum coke, but met the threshold of at least 10 percent heat

[18] *Revised MACT Floor Analysis (November 2011) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source.* Revised November 2011. See Docket ID Item No. EPA–HQ–OAR–2002–0058–3387.

[19] The EPA explained the limited nature of using only paired fuel variability data for the basis of its fuel variability factors in the original 2010 proposal. See *Maximum Achievable Control Technology (MACT) Floor Analysis (2010) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source.* See Docket ID Item No. EPA–HQ–OAR–2002–0058–0815. The EPA modified its approach slightly to address comments received on the proposed fuel analysis variability methodology as explained in the final rule (76 FR 15627) but never changed its fundamental criteria of looking only at paired fuel analysis data. As noted in the December 2011 reconsideration proposal, the EPA continued a consistent fuel variability methodology and at this juncture only "[s]mall changes to fuel variability . . . to accommodate the new TSM standard and comments received during the reconsideration process" were made, see Docket ID Item No. EPA–HQ–OAR–2002–0058–3387. When the EPA issued revised limits in the January 2013 final rule based on submitted data corrections or new data, it noted that the new data was incorporated that resulted in revised values, but the general MACT floor setting methodology remained the same (78 FR 7151).

[20] *Revised (2021) Methodology for Estimating Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants,* which is available in the docket for this action.

[21] Some facilities submitted emission test data based on previous control configurations that are no longer installed on the unit. Emission data reported while using these previous control configurations were not used to establish the MACT floor. See Docket ID Item No. EPA–HQ–OAR–2002–0058–3387.

input from biomass). The test scenario included in the proposal analysis had the sorbent injection system turned off. For the reasons discussed above, we replaced the August 2007 test with the test scenario which had the sorbent injection system turned on. After replacing this test scenario, the Port Hudson boiler was no longer part of the top five boilers in the existing source floor calculations. The Port Hudson boiler was removed from the existing source floor calculation because it had the eighth lowest mean emission test after reviewing and correcting the test scenarios used in the analysis, based on public comment. The boiler that now had the fifth lowest mean emission test is PAPHGlatfelter, PB5 (PB5 boiler), so we added the two emission tests from the PB5 boiler into the analysis for the UPL calculation for the existing source MACT floor.

Comment: Two commenters requested a data correction for the 2006 test from the Wauna boiler. The commenters noted that the PM test results in the 2013 dataset and MACT floor ranking were listed incorrectly as lb/MMBtu in the MACT floor analysis. They pointed to the supporting test report, where the values were actually in units of grains per dry standard cubic foot (gr/dscf), corrected to 7 percent oxygen, instead of lb/MMBtu. These commenters requested that the EPA revise the UPL calculation after correcting the units of measure for the 2006 test.

Response: We reviewed the docket record to verify the units of measure for the 2006 Wauna boiler test and agree with the commenters that a correction is needed to convert the gr/dscf into units of lb/MMBtu. We made this correction in the revised UPL calculation for both new and existing sources.

Comment: One commenter stated the Wauna boiler's 2004 stack test is an outlier and should be excluded from the data. The commenter stated that the EPA should remove this test and recalculate the UPL with the remaining 15 test runs from the Wauna boiler.

Response: We reviewed the 2004 Wauna boiler test that the commenter stated should be excluded to assess whether or not this test is in fact an outlier. The 2004 test had the same test method and length of the test runs as the other five tests. In addition, none of the other five tests subtracted negative filter weights or had weights less than 1 milligram. As the emissions limit is expressed in terms of emissions per heat input, we checked both the emissions and heat input data for outliers. Our general outlier test is conducted at the 5% significance level in log space, and when a value is found to be an outlier at this level, we exclude it from further calculations. We conducted an outlier test with ProUCL [22] and determined that none of the PM emission test runs had outliers, either in normal or in log space, at the 1, 5, and 10% significance levels. Observing that the heat input for the 2004 test was between 57 and 66 percent lower than the heat input for the other five tests in normal space, we conducted an outlier test with ProUCL and found that the total heat input for 2004 was an outlier at the 5 and 10% significance levels for both normal and log space. Because the heat input component of the 2004 emissions test is an outlier, we agree with the commenter that the heat input and the corresponding emissions value from this test should be excluded as an outlier. Therefore, we removed the 2004 test data from the UPL calculation for both new and existing sources.

After making the corrections to the 2006 Wauna boiler test, removing the outlier 2004 Wauna boiler test, and correcting for the appropriate tests for the Port Hudson boiler control device configurations, the existing source floor value calculations have changed since proposal. The revised emission calculations for existing sources considering these public comments and related data changes have resulted in a more stringent UPL calculation of 7.4E–03 lb/MMBtu.

Comment: One commenter requested that the EPA revise its determination for the best performer for the new source PM limit for biomass fluidized beds. The commenter noted that the EPA chose to base the new source floor on the second-best performing unit, despite having a more robust dataset for the top performer. The EPA selected the unit with the second lowest mean because it stated that the unit with the lowest mean (Wauna boiler) exhibited too much variance in its emissions data. The commenter noted that the dataset for the second-best performer (B10) offered only six test runs, while the Wauna boiler had 18 runs and better represented true variability at the unit. The commenter argued that the MACT floor should be based on the top-performing unit which utilizes the best control technology, a fabric filter, and pointed out that five of the six stack tests for the Wauna boiler exhibit consistent performance.

Response: Based on the data correction made for the units of measure for the 2006 test and removal of the 2004 test as an outlier, the calculated 99 percent UPL for the Wauna boiler decreased from the calculation in the proposed rule, from 3.2E–02 to 8.4E–03 lb/MMBtu. This revised UPL calculation for new sources still yields an anomalous result, as the new source PM limit is less stringent than the 7.4E–03 lb/MMBtu PM limit for existing sources.

Consistent with the 2020 proposal, the EPA conducted additional investigation of the revised Wauna boiler dataset to determine whether the Wauna boiler was indeed the best performing similar source. After determining the correct distribution and ensuring that we used the correct equation for the distribution, we evaluated the variance of this unit. Our analysis showed that this unit, identified as the best performing unit based on average emissions, has the highest variance among the top five performing boilers in the existing source floor, even after making the corrections for the 2004 and 2006 test data noted above. The variance is 7 times higher than the unit with the second lowest ranked mean, B10. The overall average (considering all stack tests, not just the minimum stack test average) for the Wauna boiler is also higher than the units with the second, third, and fourth lowest mean emission test results. The overall average for the Wauna boiler is 1.5 times higher than the second ranked unit, B10. This information indicates that the second ranked unit, B10, has a more consistent level of emissions performance than the Wauna Boiler, and the resulting UPL calculations support this. The calculated UPL is lower for B10 than for the Wauna boiler. For these reasons, we continue to conclude that the Wauna boiler is not the best performing source for this subcategory and pollutant and we are finalizing B10 as the best performing source. Therefore, the EPA is finalizing the proposed PM emission limit of 4.1E–03 lb/MMBtu for new sources.

More complete details of the revised analysis for both new and existing source PM emission limits are included in the docketed memorandum, *Revised MACT Floor Analysis (2021) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source.*

B. Beyond-the-Floor Emission Limits

We proposed beyond-the-floor limits for 16 subcategory and pollutant combinations. We compared the revised emission limits to the limits from the 2013 final rule to assess whether a beyond-the-floor option was technically achievable and cost effective. Typically

[22] ProUCL is a comprehensive publicly available statistical software package. See *https://www.epa.gov/land-research/proucl-software.*

we would assess technical achievability and cost effectiveness by assessing various levels of stringency of emission reductions, technical achievability of options and associated costs. For this rule, for subcategories where the 2013 limit was more stringent than the MACT floor limit calculated in the 2020 proposal, we reviewed compliance data available through CEDRI and WebFIRE to assess whether the more stringent limit was being achieved in practice. There were nine subcategory and pollutant combinations for existing sources and seven subcategory and pollutant combinations for new sources where compliance data showed boilers that already achieved the 2013 limits. Then, to assess whether compliance with the 2013 limits was cost effective, we reviewed the control devices currently installed to determine if any cost savings would occur should we finalize the less stringent limit. In all cases, the controls that were already installed were the same types of controls that would be required to meet either the 2013 limits or the less stringent limits calculated in the proposed rule and, therefore, no additional costs would be incurred to meet the more stringent limits. As a result, we proposed 16 emission limits from the 2013 final rule as beyond-the-floor limits.

There were six limits in three subcategories—new and existing units for PM for Gas 2 units, TSM for biomass suspension burners, and TSM for dry biomass stokers—where the 2013 limits were more stringent than the MACT floor limits calculated for the proposed rule, but recent compliance data were not available. Since no data were available, we did not identify any beyond-the-floor options for these subcategories and beyond-the-floor limits were not proposed for these subcategories. For TSM, sources have the option to comply with either PM or TSM emission limits. The lack of available TSM data indicates that sources in these subcategories are all complying with the PM emission limits rather than the alternative TSM limits. The lack of available PM data for Gas 2 units indicates that sources are all meeting the Gas 1 subcategory definition.

Comment: One commenter suggested that the EPA's proposed approach for the beyond-the-floor analysis does not satisfy section 112(d)(2) of the CAA, which requires the ''maximum'' degree of reduction that is ''achievable'' considering cost and other factors through all potential reduction measures. The commenter noted that the EPA only considered whether the newly recalculated floors were less stringent than the emission levels that were already being achieved, and if ''no additional costs would be incurred to meet the more stringent limits,'' then the EPA set beyond-the-floor standards which are more stringent than the floors and are equivalent to the current standards that these boilers have already been meeting. The commenter acknowledged that the EPA is correct to recognize that the current limits are achievable but argued that the EPA's analysis does not actually consider what the ''maximum'' achievable reductions are, such as what reduction levels are achievable through use of cleaner fuels or control technologies.

This commenter also stated that it is unlawful that the EPA proposed to weaken six limits since all of the units subject to those limits have already been in compliance with them for more than three years. The commenter argued that any standards that are less stringent than the 2013 limits do not represent the average emission levels achieved by the relevant best performing units.

Response: We disagree with the commenter that the beyond-the-floor analysis does not satisfy section 112(d)(2) of the CAA. In 2013, the EPA conducted a subsequent beyond-the-floor analysis, evaluating whether any recalculated emission limits were less stringent than the 2011 rule in order to assess whether a beyond-the-floor option was technically achievable and cost effective. This analysis resulted in nine beyond-the-floor limits.[23] The beyond-the-floor analysis conducted in the proposal used the same methodology and resulted in 16 proposed beyond-the-floor limits.[24]

Most of the recalculated emission limits resulting from the *U.S. Sugar* remand resulted in more stringent limits compared to the 2013 final rule. For these limits, the EPA continues to believe the analysis in the 2011 rule is reasonable, and the EPA received no information during the comment period to demonstrate it is not. Further, for most affected standards where the EPA's recalculation of the UPL resulted in a less stringent numeric limit, the EPA is retaining the more stringent limit based on its authority to set standards beyond the MACT floor. This is a reasonable approach where sources have been complying with the 2013 standards, thus demonstrating that the standards are achievable, considering the factors enumerated in section 112(d)(2) of the CAA. The only exception to this approach is for alternative standards where there is no demonstration that any source has been complying with the standard since the 2016 compliance date because no units are in the subcategory or no units have chosen to utilize the alternative limits.

Based on this, additional analyses of compliance data, and the lack of information on additional control technologies provided by the commenter, we continue to believe that our beyond-the-floor analysis is appropriate, and we are finalizing the 16 beyond-the-floor limits as proposed.

We further disagree with the commenter that it is unlawful to finalize the six emission limits that were recalculated to be less stringent than the 2013 standards. First, the court in *U.S. Sugar* determined that the 2013 limits were incorrectly calculated and remanded the standards to the EPA. The recalculated MACT floors are a result of addressing deficiencies identified by the *U.S. Sugar* court and additionally by the *NACWA* decision on limited datasets. Second, we did not identify any beyond-the-floor options for these subcategories. We found that no biomass suspension burners or dry biomass stokers have been using the alternative TSM limit for compliance—all units have been complying with the PM limit. In addition, we found that no units have been subject to the PM limit in the Gas 2 subcategory and therefore have no information to conclude that additional reductions are achievable.

In addition, we note that while these six recalculated limits are slightly less stringent than the 2013 limits, in practice they are not effectively different. Affected sources would install the same control technology to meet either the remanded or the recalculated emissions limits, despite the slight increase in the recalculated limits. Furthermore, no emissions increases are expected to result from finalizing less stringent units in these subcategories since no sources exist that are subject to the Gas 2 limit, or that are choosing to meet the alternative TSM limits.

C. Revisions to Output-Based Emission Limits

In the proposed rule, the EPA re-calculated the corresponding output-based emission limits to update the limits in the fourth column of Tables 1 and 2 of the regulatory text. Revisions were not required for all the proposed emission limits due to rounding and the small amount of change in the corresponding input-based limit between the 2013 limits and the limits in the proposed rule. The memorandum,

[23] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3843.

[24] See Docket ID Item No. EPA–HQ–OAR–2002–0058–3948.

Alternate Equivalent Output-Based Emission Limits for Boilers and Process Heaters Located at Major Source Facilities—2019 Revision, which is available in the docket for this action, provides details of the output-based emission limit revisions and methodology.

We received no comments on the proposed changes to the output-based standards. Therefore, we are finalizing the revisions to the output-based emission limits as proposed. We have revised output-based emission limit calculations to reflect the changes made to the corresponding input-based emission limits for existing source biomass fluidized bed PM and new sources solid and liquid fuel HCl. The memorandum, *Alternate Equivalent Output-Based Emission Limits for Boilers and Process Heaters Located at Major Source Facilities—2021 Revision,* which is available in the docket for this action, provides details of the output-based emission limit revisions since proposal.

D. CO as a Surrogate for Organic HAP

On July 29, 2016, the D.C. Circuit issued its decision in *U.S. Sugar Corp* v. *EPA,* 830 F.3d 579. In that decision, the court remanded to the EPA to adequately explain how CO acts as a reasonable surrogate for non-dioxin/furan organic HAPs. To be reasonable, the emission standard set for the surrogate must reflect what the best similar source or the best 12 percent of sources in the relevant subcategory achieved with regard to the HAP. This requires the surrogate's emissions to share a close relationship with the emissions of the HAP. The court identified that one crucial factor for determining whether that close relationship exists is the availability of alternative control technologies that reduce the HAP emissions without impacting that of the surrogate or, conversely, reduce the surrogate emissions without impacting the HAP emissions. The court stated that the EPA could not conclude that CO acts as a reasonable surrogate in this statutory context without considering whether the best performing boilers might be using alternative control technologies and methods that reduce organic HAP emissions beyond what they achieve by reducing CO alone. The court asked that EPA address concerns raised in public comments that alternative control technologies might further lower HAP emissions.

In response to this remand, the EPA provided further explanation to substantiate its finding that CO is an appropriate surrogate for non-dioxin/furan organic HAP. In the proposed rule, the EPA noted that available control technologies for organic HAP emissions are either combustion devices or recovery devices. Combustion is the more commonly applied option for controlling organic HAP because it is capable of high removal (destruction) efficiencies and its effectiveness does not depend on the makeup of the organic HAP stream or the organic HAP concentration. Recovery devices are not applicable for all organic HAP and are not effective in treating low organic HAP concentration streams, *i.e.,* the levels of concentrations seen in sources with good combustion practices.

In the proposal, we indicated that none of the best-performing units employ an add-on, alternative control device that was installed for controlling emissions of either organic HAP or CO. While many industrial boilers and process heaters employ post combustion controls for particulate matter, acid gases, and/or mercury, these add on controls are not designed to affect emissions of either CO or non-dioxin organic HAP. In any case, any add-on controls that are downstream of the combustion chamber of the boiler would be secondary controls that would only be effective (if at all) if the upstream primary control (the combustor) was ineffective. The presence of CO in the flue gas stream is an indicator of inefficient and incomplete combustion. The presence of non-dioxin organic HAP (or other organic compounds) in the flue gas stream would also be an indication that the upstream combustion process was inefficient and incomplete (*i.e.,* perfectly complete combustion of an organic compound would result in only CO_2 as a carbon-containing product). The best performing industrial boilers do not employ downstream controls for CO or non-dioxin organic HAP because the primary control (the combustor) is effectively destroying the non-dioxin organic HAP and downstream controls are not needed to achieve additional reductions. Minimum CO concentration in the flue gas stream is evidence of that the combustion process is efficient and effective. For these reasons, the Agency continued to conclude that CO is a reasonable surrogate for non-dioxin/furan organic HAP.

Comment: Commenters stated that not all organic HAP are products of incomplete combustion. Some organic HAP—such as polychlorinated biphenyls (PCBs) and polycyclic organic matter (POM)—can be present in the raw materials before combustion or can be generated outside the combustion unit or within the combustion unit but outside of the flame zone. In addition, different organic HAPs can be formed, destroyed, or reformed in various physical regions of diffusion flames and in different zones of premixed flames. Commenters stated that minimizing CO emissions will not minimize emissions of all organic HAP other than dioxins and furans because not all organic HAPs are formed or destroyed in combustion and post-combustion zones in the same fashion or like CO. The commenters further claimed that underlying formation and destruction of just CO in the simplest of situations involves several hundred reactions and tens of individual species are involved. The kinetics and thermodynamics become far more complex for other organic HAPs. Thus, the commenters argued, there is no basis in combustion science to presume that even any one organic HAP—much less all of them will behave similarly to CO. Specifically, the commenters claimed, pollutants like PCBs and POM/polycyclic aromatic hydrocarbon (PAH) will not be minimized by good combustion or through using a post-combustion oxidation catalyst.

Response: We agree with the commenter that organic compounds—and perhaps even organic HAP—are present in the fuels (coal, biomass, *etc*) used in industrial boilers. With regard to the PCBs mentioned by the commenter, we note that PCBs are commonly known as ''dioxin-like'' organic compounds [25] and their formation should similarly be limited by the work practice standards established for dioxins and furans. Regarding the POM/PAH mentioned by the commenter, these compounds are well known to be products of incomplete or inefficient (*i.e.,* oxygen-starved or fuel-rich) combustion.[26] [27] [28] [29] [30] Similarly, CO is also the product of inefficient combustion. In an oxygen-rich environment, complete and efficient combustion will produce CO_2 rather than CO. Regardless of whether organic HAP are present in the boiler's fuel before combustion, or whether they are generated within the combustion unit, all organic HAP would be destroyed under complete and efficient

[25] ''Dioxins'' are often described as ''dioxins, furans, and dioxin-like compounds''.

[26] Serban C. Moldoveanu, in *Pyrolysis of Organic Molecules* (*Second Edition*), 2019.

[27] T.A. Abrajano Jr., V. O'Malley, in Treatise on Geochemistry, 2007.''

[28] Z. Fan, L. Lin, in *Encyclopedia of Environmental Health (Second Edition),* 2011.

[29] M. Huang, T.M. Penning, in Encyclopedia of Food Safety, 2014.

[30] Tarek Saba, in *Introduction to Environmental Forensics (Third Edition),* 2015.

combustion conditions. Therefore, the presence of organic HAP in the boiler emission flue gas stream would be the result of incomplete combustion and higher emissions of CO (relative to CO_2) would be expected.

We also disagree with the comment that minimizing CO emissions will not minimize emissions of all organic HAP other than dioxins and furans. The Agency agrees that combustion is complex and involves many reactions causing many different organic compounds to form and be themselves combusted to form other organic compounds. Combustion is the process of breaking apart the organic (*i.e.,* carbon-containing) molecules in the fuel and converting them to CO_2. Perfectly complete combustion would convert all the carbon in the fuel to CO_2. Completeness of the combustion process is dependent on several variables, including the temperature, the amount of oxygen, and the mixing of the fuel and oxygen. Incomplete combustion results in production of partly broken down and partially oxidized organic compounds, including CO. Because the conversion of CO to CO_2 is a difficult step, and the last one in the destruction of hydrocarbons, including organic HAPs, the EPA concluded it is a good indicator of the completeness of combustion. Thus, decreasing levels of CO are correlated with increasing destruction of organic compounds until a threshold is reached where, because combustion of CO is the last step in combustion, the combustion of organic materials, including organic HAP, is essentially complete.

Comment: One commenter noted that boilers are frequently the primary control devices under many new source performance standards (NSPS) and NESHAP standards for control of emission streams containing organic compounds. Typically, vent gases containing organic HAP emissions are sent to boilers or process heaters as supplemental fuel if they have sufficient heating value, and boilers and process heaters are accepted as emission control devices because performance testing routinely shows that they can provide organic destruction efficiencies of greater than 98 percent. Nearly all boilers and process heaters use monitoring of CO as a means to evaluate whether the device is performing effectively, and when CO increases, the unit is not efficiently oxidizing CO to CO_2 and the organics are not being as effectively oxidized.

Response: We agree with the commenter that boilers have frequently been identified as the best way of reducing emissions of organic compounds. Combustion devices, such as boilers, continue to be identified as the best control option available for reducing organic HAP from various industrial processes.[31]

Comment: Commenters stated that organic HAP can be reduced not only through combustion controls but also through post-combustion controls such as fabric filters, wet scrubbers, and activated carbon injection (ACI). Commenters further stated that the EPA has found that ACI reduces emissions of all organic HAP by 80 to 90 percent. Commenters stated that this refutes the EPA's claims that the measures for controlling CO and organic HAP are the same.

Response: The EPA agrees that some downstream control devices have the capacity to reduce organic emissions. However, such downstream control devices are only effective if the primary control device—the combustor itself—is not effectively destroying the organic HAP before it reaches the downstream controls. Further, the effectiveness of the post-combustion techniques identified by the commenter, unlike thermal oxidation, depends specifically on the organic HAP and on the concentration of the particular organic HAP. The commenter noted that the EPA has previously stated that POM/PAH that is emitted during combustion can be further reduced by various post-combustion controls, including fabric filters, wet scrubbers, and ACI. However, as discussed previously, POM/PAH compounds are the product of incomplete and inefficient combustion. Therefore, if the combustor is optimized for combustion—as indicated by its CO emissions—then POM/PAH production will be minimized, and the downstream control equipment will be unnecessary.

We also disagree with the commenter that the EPA found that ACI reduces organic HAP emissions by 80 to 90 percent. The commenter is citing a telecommunication from an ACI vendor regarding organic HAP emissions from a sinter plant in the Integrated Iron and Steel Manufacturing source category, not a statement by EPA (85 FR 42090). In that action, for purposes of evaluating cost-effectiveness, the EPA assumed reductions at a level provided by the vendor but did not itself conclude that those reductions were achievable. The issue being addressed in the remand is whether the best performing units were using post-combustion controls that controlled organic HAP but did not control CO. None of the best performing boilers use an ACI system.

[31] See, for example, 40 CFR part 63, subparts F, G, H, I, and FFFF.

E. CO 130 PPM Threshold Emission Limits

On March 16, 2018, the D.C. Circuit issued its decision in *Sierra Club* v. *EPA,* 884 F.3d 1185. In that decision, the court remanded the EPA's decision to set a limit of 130 ppm CO as a surrogate for non-dioxin organic HAP for certain subcategories, asking the Agency to better explain its analysis supporting its decision. The court held that the EPA had not sufficiently explained its rationale and questioned EPA's reliance on data regarding the relationship between formaldehyde and organic HAP that the EPA had previously characterized as unreliable.

The court noted that if the EPA made and adequately supported a determination that no further reduction of HAP would occur once CO levels had been reduced to 130 ppm, the threshold would be appropriate and consistent with the CAA. The court noted three specific issues it believed the Agency did not adequately address: (1) the EPA gave no reason why organic HAP emissions could not be further reduced once CO emissions reach 130 ppm, (2) the EPA relied on formaldehyde data to support its conclusion but elsewhere stated that the same data were not a reliable indicator of organic HAP emissions at very low levels, and (3) the EPA did not adequately explain why 130 ppm is the appropriate level if there is a non-zero CO level below which organic HAP levels cannot be further reduced.

In response to this remand, the EPA provided further explanation to substantiate the 130 ppm threshold emission limit. In the proposed rule, we described the relationship that we previously found between CO and formaldehyde using the available data obtained during the 2013 rulemaking. The paired data showed decreasing formaldehyde emissions with decreasing CO emissions down to CO levels around 300 ppm (with formaldehyde emissions down to less than 1 ppm). A slight increase in formaldehyde emissions, to between 1 and 2 ppm, was observed at CO levels below around 200 ppm, suggesting a breakdown in the CO-formaldehyde relationship at low CO concentrations. At levels lower than 150 ppm, the mean levels of formaldehyde appeared to increase, as does the overall maximum value of and variability in formaldehyde emissions.

In the proposed rule, we corroborated our observation that reducing CO emissions also resulted in a reduction of

formaldehyde emissions until a leveling off in formaldehyde reductions is reached after which further reduction of CO levels appeared to result in higher levels of formaldehyde emitted. The proposed rule described in detail two additional studies—the polycyclic aromatic hydrocarbons (PAH) study [32] and the Multipollutant Control Research Facility (MPCRF) study [33]—that observed this same trend. In addition, in the proposed rule, we suggested a potential explanation for this observed trend. As has already been discussed, near complete combustion (as evidenced by very low CO concentration) is possible under an oxygen-rich environment. To achieve that oxygen-rich environment, excess combustion air must be provided to the burners. As the combustion process progresses, the increased combustion air can increase the turbulence and mixing within the boiler. This increased turbulence can result in some molecules of the reactants (*i.e.,* the oxygen and organic HAP) being forced near the furnace walls which are somewhat colder than the combustion zone. This cooling, known as the ''wall effect,'' may be sufficient to impact the combustion reaction, resulting in some organic HAP molecules that are not fully combusted, and thus emitted.

In the 2013 rulemaking, we determined that there are no further reductions of organic HAP available below 130 ppm CO. This analysis relied on our paired CO-formaldehyde data, yet we also stated that the same data were not a reliable indicator of organic HAP emissions at very low levels. At that time, we were not aware of any reason why formaldehyde concentrations would increase as CO concentrations continue to decrease, indicating improved combustion conditions. Our thinking in 2013 was that imprecise formaldehyde measurements at low concentrations may have accounted for this slight increase in formaldehyde emissions observed at CO levels below 130 ppm. In the preamble of the 2013 final rule, we stated, ''[b]ased on this, we do not believe that such measurements are sufficiently reliable to use as a basis for establishing an emissions limit.'' 78 FR 7145. In that statement, we were referring to the formaldehyde measurements and, thus, to the decision to set a CO standard instead of a formaldehyde standard.

Our evaluation of the PAH and MPRCRF studies revealed that the observed relationship in our CO-formaldehyde data was not due to imprecise or unreliable measurements, but in fact has been observed in other studies. Because the same CO–HAP relationship was presented in the PAH and MPCRF studies (*i.e.,* that organic HAP levels decreased with decreasing CO levels until a leveling off and trending upward with further decreasing CO levels), we concluded in the proposed rule that our formaldehyde data used in establishing the 130 ppm CO standard was not imprecise or unreliable and could be explained by the wall effect described above. These studies, combined with the relationship found in our CO-formaldehyde data, support that there is a non-zero CO level below which organic HAP levels are not further reduced.

Comment: One commenter opposed the EPA's claim that organic HAP are effectively nonexistent when CO levels are below 130 ppm. The commenter stated that the EPA's formaldehyde emissions data shows that there are significant formaldehyde emissions at CO levels below 130 ppm, at 2 ppm or more even with the limited data set available. The commenter also stated that the PAH study merely confirms that there are significant PAH emissions even at very high levels of excess air when CO levels would be expected to be very low. This data shows that gaseous PAH emissions actually increase with increasing excess air as it is increased from 20 percent to 40 percent—when CO levels would be dropping. The commenter further stated that the MPCRF study confirms that organic HAP emissions are not nonexistent when CO levels are at or below 130 ppm and that they are not correlated with CO.

Response: We disagree with the commenter that the *Sierra Club* decision requires the EPA to demonstrate that organic HAP emissions are ''nonexistent'' at the level of the CO standard. Rather, the court said that the standard based on a surrogate must be set at a level at which ''the EPA can be confident that the targeted HAP emissions are reduced as far as possible *or,* indeed, eliminated entirely.'' *Sierra Club,* 884 F.3d at 1195 (emphasis added). We agree with the commenter that organic HAP emissions can be non-zero when CO levels are below 130 ppm, but at that level, they are expected to be reduced to the greatest extent. Our CO-formaldehyde data for units operating at a CO concentration level below 130 ppm ranged from a measured high value of 2 ppm to a measured low value of 0.1 part per billion (ppb). The range of emissions from multiple tested units is expected due to inherent variability from unit-to-unit. In contrast, the data presented from the PAH and MPCRF studies were measured from a single unit (*i.e.,* each study used a single boiler for the tests). The MPCRF study shows the same trend with formaldehyde levels increasing from 10 ppb, at 70 ppm CO, to 57 ppb, at 40 ppm CO. The MPCRF study also shows that as the CO concentration levels at around 130 ppm, organic HAP, as a group, have been reduced to their minimum levels. Some of the organic HAP in the MPCRF study show the same trend as the PAH study and the EPA's CO-formaldehyde data. Some show no further reduction, but most of these also show a spike in concentration below 130 ppm CO. While some organic HAP did show further reduction, as stated earlier, as a group the organic HAP had been reduced to minimum levels by around 130 ppm. Based on the overall consideration of each of these organic HAP, we continue to conclude that there are no further reductions of organic HAP available below 130 ppm CO.

Comment: Commenters also disagreed with the EPA's statement that organic HAP cannot be further reduced when CO levels are below 130 ppm. The commenter stated that the EPA has recognized that all organic HAP emissions can be reduced with ACI, and some organic HAP emissions can also be reduced with other end-of-stack controls, including fabric filters and wet scrubbers.

Response: The EPA disagrees with the comment that organic HAP can be further reduced when emitted from a boiler with CO levels below 130 ppm. The level of organic HAP emitted, as indicated in the MPCRF study are in a range that is well below the inlet concentration of the post-combustion controls used for other pollutants. As discussed in the proposal preamble, Figure 4–16 of the MPCRF study shows the concentration of phenol, an organic HAP, plotted against concentration of CO. CO concentrations ranged from 40 to 140 ppm, at 7-percent oxygen, with phenol concentrations ranging from 0.6 parts per billion (ppb) at 40 ppm CO to 1 ppb at 140-ppm CO with the lowest phenol concentration (0.5 ppb) measured at 95-ppm CO (120-ppm CO at 3-percent oxygen). Concentrations of conventional pollutants (*e.g.,* NO_X, SO_2, PM) are present at much higher concentrations (ppm or vol% levels as opposed to ppb) at the inlet of their

[32] Organic Atmospheric Pollutants: Polycyclic Hydrocarbons from Coal Atmospheric Fluidised Bed Combustion (AFBC), A.M Mastral, M.S. Callen, R. Murillo, and T. Garcia, Instituto de Carboquimica, 1999.

[33] Surrogacy Testing in the MPCRF, Prepared for U.S. EPA by ARCADIS, March 30, 2011. See Docket ID Item No. EPA–HQ–OAR–2002–0058–3942.

respective controls devices (*e.g.,* SCR, wet scrubber, fabric filter or ESP).[34] Even mercury—which is a very low concentration pollutant that is not controlled by upstream combustion—is often present in concentrations of approximately 10 ppb at the inlet of the control devices and at a concentrations of approximately 1 ppb at the exit. Fixed-bed activated carbon adsorption units can be sized for controlling VOC-containing streams at concentrations *as low as several ppb* in the case of some toxic chemicals. However, while fixed-bed activated carbon adsorbers can be sized to treat low concentrations (several ppb) of VOC-containing gas streams, they can also introduce considerable pressure drop across the system resulting in additional electricity used by the system fans, which must be appropriately sized to overcome the pressure drop through the carbon beds. Therefore, we maintain that the quantity of organic HAPs being emitted below CO levels of 130 ppm is not susceptible to further control.

Furthermore, we disagree that all organic HAP emissions can be reduced with ACI and note that the commenter is citing a quote from an ACI vendor and not a statement from the EPA, as explained above. The effectiveness of ACI for air pollutant control is related to contact between a sorbent particle and a molecule of pollutant. The higher the concentration of the air pollutant—whether that be mercury or organic HAP—the more effective the pollutant is removed via adsorption to the carbon surface. As the concentration of the pollution decreases, the likelihood of contact between a pollutant molecule and a carbon sorbent particle declines significantly; and the effectiveness is diminished. Similar to the results that were observed for mercury, low inlet concentrations of organic HAP will result in a similar impact on control efficiency using ACI. In fact, none of the best performing organic HAP units are using ACI because those units are more effectively reducing organic HAP through combustion. It also is important to note that combustion devices, such as boilers, are among the best controls available for reducing organic HAP from various industrial processes.

F. New Source Definition

Several commenters requested that the EPA revise its definition of ''new source'' to base the determination of which sources must meet revised new source standards to only those sources that constructed or reconstructed after the EPA's 2020 proposed action for this final rule. The EPA disagrees that this is compelled by the statutory language and believes this final rule reflects a reasonable approach in these particular circumstances.

One commenter refers to the EPA's part 63 General Provisions regulations, which state that ''[a] new affected source for which construction commences after proposal of a relevant standard is subject to relevant standards for new affected sources, including compliance dates.'' 40 CFR 63.5(b)(1). The EPA disagrees that the statutory and regulatory provisions the commenter refers to are relevant here, or that those provisions override the statutory definition of ''new source,'' which is expressly based on the date EPA ''first proposes'' an emissions standard that applies to the source. See also 40 CFR 63.2 (defining ''new source'' in same manner). In fact, the different definition of ''new source'' in section 111 to which the commenter also refers only underscores the fact that Congress specifically defined ''new source'' in section 112 to be based on the ''first'' proposal of an emissions standard, rather than the more general ''proposed regulations'' found in section 111. Similarly, the other provisions the commenter refers to are not dispositive here. First, the General Provisions regulations the commenter refers to address pre-construction review requirements (40 CFR 63.5) and define ''emissions standard'' to mean ''a national standard, limitation, prohibition, or other regulation'' issued under section 112 (40 CFR 63.2). Neither of these provisions addresses the question here—whether the EPA must always re-define new sources when it revises a MACT standard. Similarly, the statutory definition of ''emission standard'' contains nothing that addresses whether the definition of ''new source'' under section 112 changes every time the EPA proposes to revise a MACT standard (CAA section 302(k)).

The EPA agrees that section 112(i)(2) does not address the commenter's request. That provision allows for a longer compliance period for new sources where the EPA's proposed standards are less stringent than the standards in the final rule. The commenter further claims that Congress did not address a situation where the EPA proposes to revise an emissions standard ten years after its first proposal of standards, and notes that this time period is even longer than the periodic review timeframe of 8 years. The commenter also claims that the EPA did not establish the definition of ''new source'' based on the arguably ''first'' proposal of MACT standards in 2003, and that the Agency has therefore conceded that ''first proposes'' can mean a subsequent proposal. The EPA believes its approach in the final rule is a reasonable application of the definition of ''new source'' in this particular circumstance. The MACT standards promulgated in 2004 were vacated by the D.C. Circuit in an opinion in which the court stated that it expected the reissued standards to change significantly based on a fundamental error the EPA made in defining which sources were subject to section 112 emissions standards and which sources were subject to section 129 emissions standards. *NRDC* v. *EPA,* 489 F.3d 1250 (D.C. Cir. 2007). Since the vacatur voided the standards entirely, and restored the status quo ante, there was arguably no proposal remaining after the vacatur. In response to the *NRDC* decision, the EPA undertook an entirely new rulemaking to replace the vacated standards, including an extensive data collection effort and, importantly, a new MACT floor calculation methodology. 76 FR 15608. In that circumstance, it is reasonable to consider the EPA as having ''first proposed'' an emission standard applicable to these sources in the replacement rulemaking.[35] Here, in contrast, the *U.S. Sugar* court upheld the UPL methodology the EPA used to set the MACT floor standards in another part of its opinion.[36] Where the EPA is undertaking an entirely new process to establish ''an emission standard'' applicable to a source, it is reasonable to interpret the definition of ''new source'' as applying based on the date when the EPA ''first proposes'' that new standard. However, where the Agency is simply recalculating emissions standards based on the same data and

[34] U.S. EPA. EPA Air Pollution Control Cost Manual. Sixth Edition. January 2002. EPA/452/B–02–001.

[35] The EPA notes that no commenter raised this issue in the 2011 rulemaking which was issued to replace the vacated 2004 standards, and it was not addressed in the record for the rule.

[36] As part of its review of standards affected by *U.S. Sugar,* the EPA also considered the court's prior decision in *NACWA* v. *EPA,* where the court remanded EPA's UPL methodology for further explanation based in part of the ''anomalous result'' the court found based on the UPL calculation for certain new source standards at a level that was less stringent than the UPL calculation for existing source standards. The EPA's subsequent explanation of the UPL methodology was upheld in *U.S. Sugar,* and it is appropriate for the Agency to consider standards where that ''anomalous result'' occurred and correct the calculation in those circumstances. For the new source solid fuel HCl standard, the EPA has done that through the application of its UPL methodology as applied to small data sets. The EPA's ''small data sets'' UPL approach was upheld by the D.C. Circuit in *Sierra Club* v. *EPA,* 895 F.3d 1 (2018).

same methodology, it is reasonable to treat the prior standard as EPA's ''first proposal'' of ''an emission standard'' for those sources.

One commenter claims that the EPA's proposed revised HCl standard for new source solid fuel units is significantly more stringent than the standard vacated by the *U.S. Sugar* court, and the significant change in stringency demonstrates that the EPA is using a new methodology which represents a ''drastic new approach'' that sources which constructed or reconstructed after the 2010 proposal could not have foreseen. Contrary to the commenter's assertion, the EPA is not applying a new methodology to revise the standards in this action. Rather, the EPA is simply correcting the error the court identified in how the Agency selected the best performing sources for each subcategory affected by the decision. It is not collecting any additional information or undertaking a wholesale revision of the standards. The fact that one standard became significantly more stringent does not mean the EPA has revised its methodology—it has not. Both the previous standard and the new standard were calculated using the UPL methodology.[37] Moreover, in its grant of rehearing on remedy, the court explained that it was remanding rather than vacating the standards affected by its holding because vacating the standards would remove important environmental protections while the EPA reissued the standards. *U.S. Sugar Corp.* v. *EPA,* 844 F.3d 268 (2016). It would be contrary to the court's purpose in revising its remedy to remand, rather than vacate, the emissions standards for the EPA to use the fact that its original standards were found to be inconsistent with the Act as a way to allow sources to meet less stringent standards.

Some commenters also pointed to other EPA rulemakings under sections 112 and 129 and requested that EPA take the approaches in those actions rather than the proposed approach. The EPA is basing its decision in this action on the facts and circumstances of this rulemaking, consistent with relevant provisions of CAA section 112. In the other actions that the commenters refer to, the circumstances were different and warranted a different approach. For example, the revision of EPA's Hospital/Medical/Infectious Waste Incinerator (HMIWI) standards in 2009 involved the collection of additional emissions information and a wholesale revision of the standards, unlike this action.[38] Further, actions taken to adopt MACT standards in the context of the EPA's risk and technology reviews under sections 112(d)(6) and (f)(2) also generally involve the calculation of new standards based on information that was not previously used in MACT calculations.

Commenters also express concern that the cost of compliance with the revised new source HCl standard for solid fuel units could be significant. One commenter refers to a specific unit constructed in 2016 which the commenter claims will need to add controls in order to meet the revised new source solid fuel HCl standard. The commenter claims that this renders the revised standard a ''beyond-the-floor'' MACT standard, and the EPA must therefore consider costs before adopting the revised standard. The EPA disagrees. The commenter conflates the two-step MACT standard-setting process in section 112(d)(2) and (d)(3). Under section 112(d)(3), the EPA's MACT standard can be no less stringent than the average emissions limitation achieved by the best performing twelve percent of sources in the subcategory, for existing sources, and the emissions limitation achieved by the best performing similar source, for new sources. It is well-established that, in setting these MACT floor standards, the EPA cannot consider the cost of achieving reductions. *National Lime Ass'n.* v. *EPA,* 233 F.3d 625 (D.C. Cir. 2000) (minimum stringency MACT floor requirements apply without regard to costs). This action addresses the D.C. Circuit's remand of certain MACT floor standards, and it is those floor standards that EPA is recalculating in a manner that is consistent with the court's decision. The fact that one particular recalculated standard may require sources to incur costs to comply does not transform the standard into a ''beyond-the-floor'' standard, and to do so would ignore the statute's clear directive establishing a minimum level of emissions reductions below which the MACT standard cannot be set, regardless of cost. Moreover, virtually all sources constructed or reconstructed after the 2010 proposal are in fact meeting the revised HCl standard and will therefore not incur any compliance costs.

Finally, contrary to commenters' assertions, the EPA is not applying a new standard retroactively. Every source affected by these revised limits has 3 years to come into compliance with the revised standards following promulgation, regardless of construction date. The commenter does not explain how the revised standard is a retroactive standard, except to state that a source that was constructed in 2016 could not have foreseen that the EPA would subsequently revise standards to make them more stringent. Section 112(a) defines ''new source'' based on when EPA ''first proposes'' an emissions standard for a source, and, as explained above, in this particular circumstance it is reasonable to consider EPA's 2010 proposal as the date when the Agency ''first proposed'' an emissions standard for these sources. In addition, the EPA is revising the standards to respond to the D.C. Circuit's remand in U.S. Sugar, and it was reasonable to assume, once that remand was issued, that revised standards would in some cases be more stringent than the remanded standards.

G. Approval for CO_2 in Lieu of O_2 Monitoring for CO CEMS Compliance Calculations

The current version of this regulation contains language which details how facilities that seek to monitor CO_2 in lieu of oxygen as part of their CEMS used to demonstrate compliance with the CO emission limits in this subpart must have this approach approved as an alternative method before doing so. In the proposed rule, we took comment on replacing the requirement to have approval of an alternative test method with a required methodology to be followed when monitoring CO_2 in lieu of oxygen as the diluent for CO which would account for any changes in CO_2 emission levels caused by a control device, etc. We further proposed removing several requirements for the continuous monitoring of moisture and flow which we found to be unnecessary.

Commenters supported the proposal to modify the requirement to obtain the Administrator's approval and allow this change to become self-implementing. Commenters further agreed with the EPA's proposal to remove requirements for the continuous monitoring of moisture and flow which were found to be unnecessary.

We are finalizing these provisions as proposed. Some commenters requested that we remove the requirements for continuous monitoring of moisture and flow when CO_2 measurements do not require these values for compliance

[37] The commenter claims that the solid fuel HCl standard for new sources was not vacated by the *U.S. Sugar* court and therefore EPA is not revising the standard based on that decision, but for other reasons. However, as noted above, as part of its review of standards affected by the *U.S. Sugar* remand on this issue, the EPA also applied its ''small data sets'' UPL memorandum where appropriate.

[38] The EPA notes that the definition of ''new solid waste incineration unit'' in section 129(g)(2), which was adopted in the 1990 CAAA, does not contain any reference to EPA's ''first'' proposal of applicable standards.

calculations. We believe the revisions accommodate the removal of moisture and flow when a dry CO_2 analyzer is used, obviating the need to make any additional changes to the rule language.

IV. Results and Final Decisions

A. What are the resulting changes to emission limits?

Based on all of the revisions made to address the remand related to ranking and assessing co-fired units in the MACT floor calculations, the changes made for UPL calculations for small datasets, the decisions to propose certain limits as beyond-the-floor limits, and consideration of public comments, we are finalizing revisions to 34 different emission limits. The detailed list of revisions to unit rankings and revised MACT floor calculations are presented in the docketed memorandums, *Revised MACT Floor Analysis (2019) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source* and *Revised MACT Floor Analysis (2021) for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants—Major Source.* Of these 34 emission limits, 28 of the limits are more stringent than the corresponding limits in the 2013 final rule. Six of the limits are modestly less stringent, with no more than a 25-percent change from the corresponding limit in the 2013 final rule. The final limits are shown in Table 4, along with corresponding limits from the 2013 final rule.

TABLE 4—SUMMARY OF CHANGES TO EMISSION LIMITS IN THE FINAL ACTION

Subcategory	Pollutant	2013 final rule emission limit (lb/MMBtu of heat input or ppm at 3-percent oxygen for CO)	Revised emission limit (lb/MMBtu of heat input or ppm at 3-percent oxygen for CO)
New—Solid	HCl	2.2E–02	2.1E–04
New—Dry Biomass Stoker	TSM	4.0E–03	5.0E–03
New—Biomass Fluidized Bed	CO	230	130
New—Biomass Fluidized Bed	PM	9.8E–03	4.1E–03
	(TSM)	(8.3E–05)	(8.4E–06)
New—Biomass Suspension Burner	CO	2,400	220
New—Biomass Suspension Burner	TSM	6.5E–03	8.0E–03
New—Biomass Hybrid Suspension Grate	CO	1,100	180
New—Biomass Dutch Oven/Pile Burner	PM	3.2E–03	2.5E–03
New—Biomass Fuel Cell	PM	2.0E–02	1.1E–02
New—Wet Biomass Stoker	CO	620	590
New—Wet Biomass Stoker	PM	0.03	0.013
New—Liquid	HCl	4.4E–04	1.5E–04
New—Heavy Liquid	PM	1.3E–02	1.9E–03
	(TSM)	(7.5E–05)	(6.4E–06)
New—Process Gas	PM	6.7E–03	7.3E–03
Existing—Solid	HCl	2.2E–02	2.0E–02
Existing—Solid	Hg	5.7E–06	5.4E–06
Existing—Coal	PM	4.0E–02	3.9E–02
Existing—Coal Stoker	CO	160	150
Existing—Dry Biomass Stoker	TSM	4.0E–03	5.0E–03
Existing—Wet Biomass Stoker	CO	1,500	1,100
Existing—Wet Biomass Stoker	PM	3.7E–02	3.4E–02
	(TSM)	(2.4E–04)	(2.0E–04)
Existing—Biomass Fluidized Bed	CO	470	210
Existing—Biomass Fluidized Bed	PM	1.1E–01	7.4E–03
	(TSM)	(1.2E–03)	(6.4E–05)
Existing—Biomass Suspension Burners	PM	5.1E–02	4.1E–02
	(TSM)	(6.5E–03)	(8.0E–03)
Existing—Biomass Dutch Oven/Pile Burner	PM	2.8E–01	1.8E–01
Existing—Liquid	Hg	2.0E–06	7.3E–07
Existing—Heavy Liquid	PM	6.2E–02	5.9E–02
Existing—Non-Continental Liquid	PM	2.7E–01	2.2E–01
Existing—Process Gas	PM	6.7E–03	7.3E–03

B. What compliance dates are we finalizing?

We are finalizing that facilities have up to 3 years after the effective date of the final rule to comply with the revised emissions limits in this final rule. Before this date, facilities must continue to comply with the rule as it was finalized in 2015. This allowance is being made considering that some facilities may require additional add-on controls or monitoring equipment to be designed, purchased, and installed in order to meet the more stringent emission limits, or to modify the method of compliance based on the changes in emission limits. In addition, units will require lead time to prepare and execute their testing plans to demonstrate compliance with the revised emission limits and to update reports to incorporate the revised emission limits.

C. What other actions are we finalizing?

We proposed a number of technical corrections to correct inadvertent errors that were promulgated in the 2013 and 2015 final rules. Public commenters also noted several additional technical corrections to correct additional errors in the final rule. In addition, we are removing the references to the date of

future final performance specifications for HCl CEMS because PS 18, the Performance Specifications for Gaseous Hydrogen Chloride, and Procedure 6, the Quality Assurance Requirements for Gaseous Hydrogen Chloride (HCl) Continuous Emission Monitoring Systems Used for Compliance Determination at Stationary Sources, were promulgated on July 7, 2017 at 80 FR 38628. The technical corrections we are finalizing are summarized in Table 5.

TABLE 5—FINALIZED TECHNICAL CORRECTIONS TO 40 CFR PART 63, SUBPART DDDDD

Section of subpart DDDDD	Description of correction
40 CFR 63.7500(a)	Revise this paragraph to remove the comma after "paragraphs (b)."
40 CFR 63.7521(c)(1)(ii)	Revise this paragraph to remove the requirement to collect samples during the test period at 1-hour intervals.
40 CFR 63.7525(l) and 40 CFR 63.7540(a)(15).	Remove the references to a date of a final performance specification for HCl CEMS.
40 CFR 63.7530(b)(4)(iii)	Revise this paragraph to remove the sentence regarding establishing the pH operating limit because establishing the pH operating limit is not required for a PM wet scrubber.
40 CFR 63.7540(a)(9)	Revise this paragraph to clarify that "certify" is intended to apply only to PM CEMS, not PM continuous parameter monitoring systems (CPMS) because PM CPMS do not have a performance specification.
40 CFR 63.7575	Revise the definition of "Other gas 1 fuel" to clarify that it is the maximum Hg concentration of 40 micrograms/cubic meter of gas. Add definition of "12-month rolling average" to clarify that the previous 12 months must be consecutive but not necessarily continuous. Revise paragraph (4) of definition "Steam output" to correct "heaters" to "headers."
Table 1	Revise the output limit in item 8.a to correct for a rounding error, the value is now 4.3E–01 lb per MMBtu instead of 4.2E–01 lb per MMBtu. Remove footnote "a" from item 12b for the TSM limit for fuel cell units designed to bum biomass/bio-based solids. Add footnote "a" to item 1a for the solid fuel HCl limit, item 14a for the liquid fuel HCl limit, and item 15b for the light liquid fuel TSM limit.
Table 2	Removed footnote "a" for item 14b for the liquid fuel mercury emission limit and 16b for light liquid PM emission limit.
Table 7	Revise footnote "b" to clarify that when multiple performance tests are conducted, the maximum operating load is the lower of the maximum values established during the performance tests.
Table 8	Revise item 8.d to clarify that the correct equations to use are Equations 15 and Equations 16, 17, and/or 18 in 40 CFR 63.7530.
Table 14	Remove footnote "a" from item 12b for the TSM limit for fuel cell units designed to bum biomass/bio-based solids. Add footnote "a" to item 15b for the light liquid fuel TSM limit.
Table 15	Removed footnote "a" for item 14b for the liquid fuel mercury emission limit and 16b for light liquid PM emission limit.

V. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected sources?

According to CEDRI data through December 31, 2020, there are 577 boilers and process heaters, of which 485 remain operational and belong in one of the subcategories that are subject to numeric emission limits.[39] This count excludes any boilers that are no longer operational, boilers that have refueled and switched to the natural gas subcategory and are, therefore, no longer impacted by changes to emission limits, or boilers that are classified as small or limited use. Of these units, we estimate that 54 units (individual boilers or process heaters) will incur cost or emissions impacts due to these final amendments. In addition, the EPA estimates that an additional six biomass boilers or process heaters will be constructed and subject to the revised emission limits over the next 8 years.

B. What are the air quality impacts?

Table 6 of this preamble shows the incremental emissions reductions that we estimate these final amendments will achieve. The reductions are incremental to the reductions accounted for in the 2013 final rule. Nationwide emissions of selected HAP (*i.e.,* HCl, hydrogen fluoride, Hg, and metals) would be reduced by an additional 117 tpy as compared to the estimates in the 2013 final rule. This increase is due mainly to changes to certain emission limits that are anticipated to achieve additional reductions. We estimate the final amendments will result in an additional 110 tpy of reductions in HCl emissions. We estimate that the final amendments will have a modest effect on Hg, with an estimated additional reduction of 7.5 lbs per year. Emissions of filterable PM are estimated to decrease by 586 tpy, of which 446 tpy is $PM_{2.5}$, due to this final action. Emissions of non-Hg metals (*i.e.,* arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium) are estimated to decrease by 4.1 tpy. Estimates of reductions in antimony and cobalt were not quantified and are expected to be small. In addition, the final amendments are estimated to result in 1,141 tpy of reductions in SO_2 emissions. A discussion of the methodology used to estimate emissions, emissions reductions, and incremental emission reductions is presented in the memorandum, *Revised (2021) Methodology for Estimating Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants,* which is available in the docket for this action.

[39] EPA notes that it considered compliance information from CEDRI for the purpose of evaluating costs and impacts of this action, in order to ensure that the actual costs of compliance are accurately reflected. For the reasons explained elsewhere, the Agency did not consider emissions data in CEDRI to recalculate the MACT floor standards affected by the D.C. Circuit remand in *U.S. Sugar.* The MACT "floor" is the minimum control level allowed for MACT standards promulgated under CAA section 112(d)(3) and may not be based on cost considerations.

TABLE 6—SUMMARY OF TOTAL EMISSIONS REDUCTIONS FOR THE FINAL RULE

[Tons per year]

Source	Subcategory	HCl	PM	Non-Hg metals [1]	Hg
Exiting Units	Coal	44.1	54.4	0.12	2.12E–03
	Biomass	13.6	521	3.8	1.65E–03
New Units	Biomass	52.3	9.9	0.14	0

[1] Arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium.

C. What are the cost impacts?

We estimated the total capital costs of the final amendments to be about $201 million and the total annualized costs to be about $49.6 million in 2016 dollars. The total capital and annual costs include costs for control devices, testing, and monitoring associated with the changes to the emission limits. These costs are incremental to the costs presented in the 2013 final rule in the sense that they show where units with compliance data must install add-on controls or modify compliance strategies in order to meet the more stringent limits in this final action. Table 7 shows the total capital and annual cost impacts of the final rule for each subcategory. The cost methodology and results are documented in the memorandum, *Revised (2021) Methodology for Estimating Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants,* which is available in the docket for this action.

TABLE 7—SUMMARY OF TOTAL CAPITAL AND ANNUAL COSTS FOR AFFECTED NEW AND EXISTING SOURCES FOR THE FINAL RULE

Source	Subcategory	Estimated number of affected units incurring a cost	Capital costs (millions 2016$)	Testing and monitoring annualized costs (millions 2016$/yr)	Annualized cost (millions 2016$/yr)
Existing Units	Coal	5	8.0	0.057	2.1
	Biomass	33	149.5	0.511	35.1
New Units	Biomass	11	43.3	0.043	12.3

Another way to present compliance costs is the present value (PV). A PV is an estimate of costs that is a discounted stream of the annualized costs for the final action calculated for the present day. The PV in 2016 of the costs is $265 million at a discount rate of 7 percent and $315 million at a discount rate of 3 percent. Calculated as an EAV, which is consistent with the PV of costs in 2016, the costs are $44 million at a discount rate of 7 percent and $45 million at a discount rate of 3 percent. These estimates are also in 2016 dollars. More information on the PV and EAV estimates can be found in the RIA for this final action which is available in the docket.

D. What are the secondary impacts?

The EPA estimated the additional water usage that would result from installing wet scrubbers to meet the amended emission limits for HCl would be 0.75 million gallons per year for new and existing sources compared to the 2013 baseline. In addition to the increased water usage, an additional 0.29 million gallons per year of wastewater will be produced for new and existing sources. The annual costs of treating the additional wastewater are approximately $1,920. These additional costs are accounted for in the control cost estimates.

The EPA estimated the additional solid waste that would result due to the final amendments to be 1,540 tpy for new and existing sources. Solid waste is generated from flyash and dust captured in fabric filters and electrostatic precipitators (ESP) installed for PM and Hg controls as well as from spent materials from wet scrubbers and sorbent injection systems installed for additional HCl controls. The costs of handling the additional solid waste generated are approximately $73,900. These costs are also accounted for in the control costs estimates.

The EPA estimated the final amendments would result in an increase of about 74.4 million kilowatts per year in national energy usage from the electricity required to operate control devices, such as wet scrubbers, ESPs, and fabric filters which are expected to be installed to meet the revised emission limits. This energy requirement is estimated to result in an increase of approximately 32,910 tpy CO_2 based on emissions related to additional energy consumption.

A discussion of the methodology used to estimate impacts is presented in the *Revised (2021) Methodology for Estimating Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants,* which is available in the docket for this action.

E. What are the economic impacts?

The EPA conducted an economic impact analysis for this final rule, as detailed in the *Regulatory Impact Analysis for the ICI Boilers NESHAP Final Amendments,* which is available in the docket for this action. The economic impacts are calculated as the percentage of total annualized costs incurred by affected parent owners to their annual revenues. This ratio of total annualized costs to annual revenues provides a measure of the direct economic impact to parent owners of affected facilities while presuming no passthrough of costs to consumers of output produced by these facilities. Of 30 parent owners affected by this final rule, two of them will incur total annualized costs of 1 percent or greater of their revenues. The median total annualized cost of sales for affected parent owners is less than 0.01 percent. While two parent owners may experience substantial economic impacts as a result of complying with

this final rule, neither one is a small business according to Small Business Administration (SBA) guidelines. Overall, based on these estimated impacts, we can conclude that the economic impacts are relatively low for the affected entities and the multiple affected industries, and consumers of affected output should experience relatively low price changes.

F. What are the benefits?

There are no monetized benefits from the HAP emissions reductions directly regulated under this action due to lack of necessary input data. However, the EPA reports the estimated impact on health benefits from changes in $PM_{2.5}$ and SO_2 emissions that occur as a result of this final rule. The estimated health benefits are the monetized value of the human health benefits among populations exposed to changes in $PM_{2.5}$. This rule is expected to alter the emissions of $PM_{2.5}$ (and SO_2). Due to the small change in emissions expected, we used the ''benefit per ton'' (BPT) approach to estimate the benefits of this rulemaking. The EPA has applied this approach in several previous RIAs [40] in which the economic value of human health impacts is derived at the national level based on previously established source-receptor relationships from photochemical air quality modeling.[41] These BPT estimates provide the total monetized human health benefits (the sum of PM-attributable premature deaths and premature morbidity) of reducing 1 ton of $PM_{2.5}$ (or $PM_{2.5}$ precursor such as SO_2) from a specified source. Since proposal of this rule, the EPA has updated its BPT estimates to include state level estimates specifically for the Industrial Boiler sector. The method used to derive these estimates is described in the *Technical Support Document on Estimating the Benefit per Ton of Reducing Directly-Emitted $PM_{2.5}$, $PM_{2.5}$ Precursors and Ozone Precursors from 21 Sectors and its precursors from 21 sectors.*[42] One limitation of using the BPT approach is an inability to provide estimates of the health benefits associated with exposure to HAP (HCl, for example), CO, or nitrogen dioxide. The photochemical modeled emissions of the industrial point source sector-attributable $PM_{2.5}$ concentrations used to derive the BPT values may not match the change in air quality resulting from the emissions controls.

Specifically, all national-average BPT estimates reflect the geographic distribution of the modeled emissions, which may not exactly match the emission reductions that would occur due to rulemaking, and they may not reflect local variability in population density, meteorology, exposure, baseline health incidence rates, or other local factors for any specific location. The new BPT estimates developed for the Industrial Boiler sector in 2021 developed state-level estimates that addressed some of the limitations of the national analysis. Given the use of state level, sector specific air quality modeling and the small changes in emissions considered in this rulemaking, the difference in the quantified health benefits that result from the BPT approach compared with those obtained using a full-form air quality model should be minimal.

Table 8 summarizes the monetized PM related health benefits per ton in the states where units with emission reductions are located, using discount rates of 3 percent and 7 percent. Table 9 summarizes the monetized SO_2-related health benefits per ton of reducing precursor pollutant emissions in the states where units with emission reductions are located, using discount rates of 3 and 7 percent.

TABLE 8—ESTIMATED $PM_{2.5}$-RELATED BENEFITS PER TON OF FINAL RULE

State	Benefit per ton low (3% discount rate)	Benefit per ton low (7% discount rate)	Benefit per ton high (3% discount rate)	Benefit per ton high (7% discount rate)
CA	$503,000	$452,000	$510,000	$459,000
FL	140,000	126,000	141,000	127,000
GA	151,000	136,000	156,000	141,000
LA	117,000	105,000	123,000	110,000
ME	48,200	43,400	50,500	45,500
MI	259,000	233,000	262,000	236,000
NC	171,000	154,000	173,000	156,000
OK	103,000	92,600	106,000	95,8000
TN	227,000	204,000	235,000	212,000
WI	148,000	133,000	156,000	140,000

TABLE 9—ESTIMATED SO_2-RELATED BENEFITS PER TON OF FINAL RULE

State	Benefit per ton low (3% discount rate)	Benefit per ton low (7% discount rate)	Benefit per ton high (3% discount rate)	Benefit per ton high (7% discount rate)
AL	$50,600	$45,500	$52,100	$46,900
AR	42,300	38,100	43,000	38,700
FL	45,600	41,000	46,400	41,800
IL	54,800	49,300	55,300	51,300
MI	56,000	50,300	57,000	49,800

[40] U.S. EPA. Regulatory Impact Analysis for the Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone in 27 States; Correction of SIP Approvals for 22 States. June 2011; Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, December 2011; and Regulatory Impact Analysis for the Particulate Matter National Ambient Air Quality Standards; December 2012.

[41] Fann N, Fulcher CM, Hubbell BJ. The influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution. Air Qual Atmos Health. 2009;2(3):169–176. doi:10.1007/s11869–009–0044–0.

[42] U.S. EPA. 2021. Technical Support Document (BPT TSD) on Estimating the Benefit per Ton of Reducing Directly-Emitted $PM_{2.5}$, $PM_{2.5}$ Precursors and Ozone Precursors from 21 Sectors and its precursors from 21 sectors. Technical Support Document. Available at: *https://www.epa.gov/benmap/reduced-form-tools-calculating-pm25-benefits.*

TABLE 9—ESTIMATED SO_2-RELATED BENEFITS PER TON OF FINAL RULE—Continued

State	Benefit per ton low (3% discount rate)	Benefit per ton low (7% discount rate)	Benefit per ton high (3% discount rate)	Benefit per ton high (7% discount rate)
NC	45,300	40,700	45,600	41,000
TX	14,900	13,400	15,100	13,600
VA	53,400	48,100	54,100	48,700
WA	20,300	18,300	20,800	18,700

TABLE 10—ANNUAL EMISSIONS REDUCTIONS OF $PM_{2.5}$ AND SO_2 BY STATE

State	Emission reductions (tons)	
	$PM_{2.5}$	SO_2
AL	.....	26
AR	.....	<0.1
CA	33	.....
FL	17	557
GA	10	.....
IL	.....	306
LA	27	.....
ME	5	.....
MI	4	41
NC	2	179
OK	257	.....
TN	40	.....
TX	.....	1
VA	.....	31
WA	.....	2
WI	51	.....

Table 10 above provides the annual emissions reductions of $PM_{2.5}$ and SO_2 by state. Table 11 summarizes the range of estimated benefits of these annual emission reductions by pollutant for the two benefit per ton estimates at discount rates of 3 percent and 7 percent.

TABLE 11—ESTIMATED $PM_{2.5}$ AND SO_2-RELATED ANNUAL HEALTH BENEFITS OF FINAL RULE

[Millions of 2016$]

Pollutant	Benefits low (3% discount rate)	Benefits low (7% discount rate)	Benefits high (3% discount rate)	Benefits high (7% discount rate)
$PM_{2.5}$	$68	$62	$68	$62
SO_2	55	50	56	51
Total	123	112	124	113

There are also climate disbenefits from the increase in CO_2 emissions that result from the increase in national energy use from control device operation. We estimate the social disbenefits of CO_2 emission increases expected from this final rule using the SC–CO_2 estimates presented in the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990.*[43] We have evaluated the SC–CO_2 estimates in the February 2021 TSD and have determined that these estimates are appropriate for use in estimating the social value of CO_2 emission changes expected from this final rule as part of fulfilling analytical guidance with respect to E.O. 12866. These SC–CO_2 estimates are interim values developed for use in benefit-cost analyses until an improved estimate of the impacts of climate change can be developed based on the best available science and economics.

Table 12 shows the estimated monetary value of the estimated changes in CO_2 emissions expected to occur for the final rule. For 2022–2024, no changes in CO_2 emissions occur since the control technologies included in the cost analysis mentioned in the Cost Methodology memo for the final rule are not expected to begin operation until 3 years after the effective date of the final rule, or 2025. Hence, there are no climate disbenefits for these 3 years. In 2025, the EPA estimated the dollar value of the CO_2-related effects by applying the SC–CO_2 estimates, included in the RIA's benefits chapter, to the estimated changes in CO_2

[43] Interagency Working Group on Social Cost of Greenhouse Gases (IWG). 2021. Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990. February. United States Government. Available at: *https://www.whitehouse.gov/briefing-room/blog/2021/02/26/a-return-to-science-evidence-based-estimates-of-the-benefits-of-reducing-climate-pollution/.*

emissions in the corresponding year under the final rule.[44] The EPA calculated the present value and annualized benefits from the perspective of 2020 by discounting each year-specific value to the year 2020 using the same discount rate used to calculate the SC–CO_2.[45]

TABLE 12—ESTIMATED CLIMATE DISBENEFITS FROM CHANGES IN CO_2 EMISSIONS FOR 2025

[Millions of 2016$][a]

	Discount rate and statistic				
	Year	5% average	3% average	2.5% average	3% 95th percentile
Final Rule	2025	0.5	1.7	2.5	5.2

[a] Climate disbenefits are based on changes (reductions) in CO_2 emissions and are calculated using four different estimates of the social cost of carbon (SC–CO_2) (model average at 2.5 percent, 3 percent, and 5 percent discount rates; 95th percentile at 3 percent discount rate). We emphasize the importance and value of considering the disbenefits calculated using all four SC–CO_2 estimates. As discussed in the Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990, a consideration of climate benefits calculated using discount rates below 3 percent, including 2 percent and lower, are also warranted when discounting intergenerational impacts.

The climate disbenefits associated with the additional 32,910 short tons (or 29,855 metric tons) per year of CO_2 emissions generated as a result of the requirements of this final rule are therefore $1.7 million at a 3 percent discount rate, and range from $0.5 million at a 2.5 percent discount rate to $5.2 million at a 3 percent discount rate (95th percentile), all in 2016 dollars.[46] These disbenefits are estimated for 2025, the year of full implementation of this final rule (3 years after the effective date) using the interim social cost of carbon (SC–CO_2) for 2025 as shown in Table 12 to be consistent with the year for the $PM_{2.5}$ and SO_2 BPTs applied to generate those monetized benefits presented earlier in section V.F.[47]

These disbenefits are included in the estimates of benefits and net benefits for this final rule. The benefit analysis for this final rule, which includes PV and EAV estimates for the benefits and net benefits, is detailed in the *Regulatory Impact Analysis for the ICI Boilers and Process Heaters NESHAP Final Amendments,* which is available in the docket for this action.

G. What analysis of environmental justice did we conduct?

Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms; specifically, minority populations, low-income populations, and indigenous peoples (59 FR 7629, February 16, 1994). Additionally, Executive Order 13985 was signed to advance racial equity and support underserved communities through Federal government actions (86 FR 7009, January 20, 2021). The EPA defines environmental justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The EPA further defines the term fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies'' (*https://www.epa.gov/environmentaljustice*). In recognizing that minority and low-income

[44] CO_2 emissions increases above the baseline as a result of the modeled policy are first expected in 2025, as control technologies applied in response to the final rule first begin operation in that year, and those emissions increase remain at that level afterwards, according to the cost analysis for this rule.

[45] According to OMB's Circular A–4, an ''analysis should focus on benefits and costs that accrue to citizens and residents of the United States'', and international effects should be reported separately. Circular A–4 also reminds analysts that ''[d]ifferent regulations may call for different emphases in the analysis, depending on the nature and complexity of the regulatory issues.'' To correctly assess the total climate damages to U.S. citizens and residents, an analysis must account for all the ways climate impacts affect the welfare of U.S. citizens and residents, how U.S. GHG mitigation activities affect mitigation activities by other countries, and spillover effects from climate action elsewhere. The SC–CO_2 estimates used in regulatory analysis under revoked E.O. 13783, including in the RIA for the proposed rule, were an approximation of some of the U.S.-specific climate damages from GHG emissions (*e.g.,* $7/mt$CO_2$ (2016 dollars) using a 3% discount rate for emissions occurring in 2025). Applying the same estimate (based on a 3% discount rate) to the CO_2 emissions expected under the final rule would yield disbenefits from climate impacts of $0.2 million (2016 dollars) in 2025. However, as discussed at length in the February 2021 TSD, these estimates are an underestimate of the damages of CO_2 emissions accruing to U.S. citizens and residents, as well as being subject to a considerable degree of uncertainty due to the manner in which they are derived. In particular, the estimates developed under revoked E.O. 13783 did not capture significant regional interactions, spillovers, and other effects and so are incomplete underestimates. As the U.S. Government Accountability Office (GAO) concluded in a June 2020 report examining the SC–GHG estimates developed under E.O. 13783, the models ''were not premised or calibrated to provide estimates of the social cost of carbon based on domestic damages''. U.S. Government Accountability Office (GAO). 2020. Social Cost of Carbon: Identifying a Federal Entity to Address the National Academies' Recommendations Could Strengthen Regulatory Analysis. GAO–20–254. Further, the report noted that the National Academies found that country-specific social costs of carbon estimates were ''limited by existing methodologies, which focus primarily on global estimates and do not model all relevant interactions among regions''. It is also important to note that the SC–GHG estimates developed under E.O. 13783 were never peer reviewed, and when their use in a specific regulatory action was challenged, the U.S. District Court for the Northern District of California determined that use of those values had been ''soundly rejected by economists as improper and unsupported by science,'' and that the values themselves omitted key damages to U.S. citizens and residents including to supply chains, U.S. assets and companies, and geopolitical security. The Court found that by omitting such impacts, those estimates ''fail[ed] to consider . . . important aspect[s] of the problem'' and departed from the ''best science available'' as reflected in the global estimates. *California* v. *Bernhardt,* 472 F. Supp. 3d 573, 613–14 (N.D. Cal. 2020). The EPA continues to center attention in this regulatory analysis on the global measures of the SC–GHG as the appropriate estimates and as necessary for all countries to use to achieve an efficient allocation of resources for emissions reduction on a global basis, and so benefit the U.S. and its citizens.

[46] In order to calculate these values, it is necessary to convert tons (short) of emissions to metric tons. These values may be converted to $/short ton using the conversion factor 0.90718474 metric tons per short ton for application to the short ton CO_2 emissions impacts provided in this rulemaking. Hence, 32,910 short tons of emissions become 29,855 metric tons (tonnes) of emissions.

[47] These SC–CO_2 values are stated in $/metric ton CO_2 and rounded to the nearest dollar. Such a conversion does not change the underlying methodology, nor does it change the meaning of the SC–CO_2 estimates. For both metric and short tons denominated SC–CO_2 estimates, the estimates vary depending on the year of CO_2 emissions and are defined in real terms, *i.e.,* adjusted for inflation using the Gross Domestic Product (GDP) implicit price deflator.

populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution.

To examine the potential for any EJ issues that might be associated with the source category, we performed a demographic analysis, which is an assessment of individual demographic groups of the populations living within 5 kilometers (km) and within 50 km of facilities with affected sources.[48] The EPA then compared the data from this analysis to the national average for each of the demographic groups.

The results of the demographic analysis indicate that, for populations within 5 km of the facilities in the source category, the percent minority population (being the total population minus the white population) is smaller than the national average (36 percent versus 40 percent). Within minorities, the percent of the population that is African American, Other and Multiracial, and Native American are similar to the national averages. The percent of the population that is Hispanic or Latino is below the national average (14 percent versus 19 percent). The percent of people living below the poverty level was higher than the national average (18 percent versus 13 percent). The percent of people living in linguistic isolation was less than the national average. The results of the analysis of populations within 50 km of the facilities in the source category were similar to the 5 km analysis, with the exception of the percent of the population living below the poverty level and the percent of the population over 25 without a high school diploma, which were closer to the national averages.

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income, or indigenous populations, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). Nationwide emissions of selected HAP (*i.e.,* HCl, hydrogen fluoride, Hg, and metals) would be reduced by an additional 117 tpy as compared to the estimates in the 2013 final rule. We estimate the final amendments will result in an additional 110 tpy of reductions in HCl emissions, and 7.5 lbs per year of Hg. Emissions of filterable PM are estimated to decrease by 586 tpy, of which 446 tpy is $PM_{2.5}$. Emissions of non-Hg metals (*i.e.,* arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium) are estimated to decrease by 4.1 tpy. In addition, the final amendments are estimated to result in 1,141 tpy of reductions in SO_2 emissions. A breakdown of emissions reductions by facility is presented in Appendix C of the memorandum, *Revised (2021) Methodology for Estimating Impacts for Industrial, Commercial, Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants,* which is available in the docket for this action. This final rule increases the level of environmental protection for all affected populations, without having any disproportionately high and adverse human health or environmental effects on any population, including any minority, low-income, or indigenous populations.

A summary of the proximity demographic assessment performed for Industrial, Commercial, and Institutional Boilers and Process Heaters facilities is included as Table 13. The methodology and the results of the demographic analysis are presented in a technical report, *Analysis of Demographic Factors for Populations Living Near Industrial, Commercial, and Institutional Boilers and Process Heaters,* available in this docket for this action (Docket ID EPA–HQ–OAR–2002–0058).

TABLE 13—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS

Demographic group	Nationwide	Population within 50 km of 40 facilities	Population within 5 km of 40 facilities
Total Population	328,016,242	14,889,295	635,825
	White and Minority by Percent		
White	60%	65%	64%
Minority	40%	35%	36%
	Minority by Percent		
African American	12%	14%	13%
Native American	0.7%	0.5%	0.8%
Hispanic or Latino (includes white and nonwhite)	19%	13%	14%
Other and Multiracial	8%	7%	8%
	Income by Percent		
Below Poverty Level	13%	14%	18%
Above Poverty Level	87%	86%	82%
	Education by Percent		
Over 25 and without a High School Diploma	12%	12%	14%
Over 25 and with a High School Diploma	88%	88%	86%
	Linguistically Isolated by Percent		

[48] Note that many facilities have more than one affected boiler or process heater.

TABLE 13—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS—Continued

Demographic group	Nationwide	Population within 50 km of 40 facilities	Population within 5 km of 40 facilities
Linguistically Isolated	5%	3%	4%

Notes:
• The nationwide population count and all demographic percentages are based on the Census' 2015–2019 American Community Survey five-year block group averages and include Puerto Rico. Demographic percentages based on different averages may differ. The total population counts within 5 km and 50 km of all facilities are based on the 2010 Decennial Census block populations.
• Minority population is the total population minus the white population.
• To avoid double counting, the "Hispanic or Latino" category is treated as a distinct demographic category for these analyses. A person is identified as one of five racial/ethnic categories above: White, African American, Native American, Other and Multiracial, or Hispanic/Latino. A person who identifies as Hispanic or Latino is counted as Hispanic/Latino for this analysis, regardless of what race this person may have also identified as in the Census.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is an economically significant regulatory action that was submitted to OMB for review. Any changes made in response to OMB recommendations have been documented in the docket. The RIA contains the estimated costs, benefits, and other impacts associated with this action, and it is available in the docket.

B. Paperwork Reduction Act (PRA)

The new information collection activities in this rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2028.12. OMB Control Number 2060–0551. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

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

The final amendments changed several emission limits as part of the EPA's response to the remand granted on December 23, 2016, by the D.C. Circuit. The changes resulted in more stringent emission limits in some cases, which is expected to require additional recordkeeping and reporting burden. This increase is a result of additional monitoring and control devices anticipated to be installed to comply with the more stringent emission limits in the amendments. With additional control devices, comes additional control device parametric monitoring, or in the case of CO, continuous emissions monitoring, and the associated records of that monitoring that must be maintained on-site and reported. Over the next 3 years, approximately 34 respondents operating existing large solid fuel-fired boilers and 5 respondents operating new solid fuel-fired boilers will be impacted by the new requirements under the standard as a result of these amendments. In addition to the costs to install and maintain records of additional monitoring equipment, the ICR details other additional recordkeeping and reporting burden changing records associated with adjusting operating parameter limit values, modifying monitoring plans, and familiarizing themselves with the changes in the final amendments.

Respondents/affected entities: Owners or operators of ICI boilers and process heaters.

Respondent's obligation to respond: Mandatory, 40 CFR part 63.

Estimated number of respondents: 39.

Frequency of response: Semi-annual, annual, periodic.

Total estimated burden: 1,553 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $1,130,000 (per year), includes $949,000 annualized capital or operation and maintenance costs.

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 the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. Of the 30 entities (ultimate parent entities, all but two being in the private sector) determined to be impacted by this action, two are small entities. Of these two small entities, none is expected to incur any costs as a result of compliance with this action. More information on these small entity impacts is available in the RIA.

D. Unfunded Mandates Reform Act (UMRA)

This action contains a Federal mandate under UMRA, 2 U.S.C. 1531–1538, 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. Accordingly, the EPA has prepared a written statement required under section 202 of UMRA. The statement is included in the RIA for this final rule that is in the docket for this action. This action is not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive

Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in the RIA.

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

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. The energy impacts estimated for this action increased only slightly the energy impacts estimated for the March 21, 2011, final rule which was concluded not to be a significant regulatory action under Executive Order 13211. Therefore, we conclude that this final rule is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

This action does not involve any new technical standards from those contained in the March 21, 2011, final rule. Therefore, the EPA did not consider the use of any voluntary consensus standards. See 76 FR 15660–15662 for the NTTAA discussion in the March 21, 2011, final rule. The EPA is, however, formalizing the incorporation of one technical standard that was already incorporated in 40 CFR 63.14 as well as in several existing tables in 40 CFR part 63, subpart DDDDD. This standard is ASTM D6784–02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method). This method, which describes the measurement of particle-bound, oxidized, elemental, and total mercury in stationary-source flue gases provides data that can be used for emissions assessments and reporting as well as the certification of continuous mercury monitoring systems. It describes equipment and procedures for obtaining samples of mercury from effluent ducts and stacks, for laboratory analysis, and for calculating results. It is applicable for sampling elemental, oxidized, and particle-bound mercury in flue gases of coal-fired stationary sources. It may not be suitable at all measurement locations, particularly those with high particulate loadings. Method applicability is limited to flue gas stream temperatures within the thermal stability range of the sampling probe and filter components. The standard is available to the public for free viewing online in the Reading Room section on ASTM's website at *https://www.astm.org/READINGLIBRARY/*. Hardcopies and printable versions are also available for purchase from ASTM. Additional information can be found at *https://www.astm.org/products-services/standards-and-publications.html*.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The documentation for this decision is contained in a technical report, *Analysis of Demographic Factors for Populations Living Near Industrial, Commercial, and Institutional Boilers and Process Heaters,* available in this docket for this action (Docket ID EPA–HQ–OAR–2002–0058).

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is a ''major rule'' as defined by U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Michael S. Regan,

Administrator.

For the reasons stated in the preamble, 40 CFR part 63 is amended as follows:

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

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

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

Subpart A—General Provisions

■ 2. Section 63.14 is amended by revising paragraph (h)(103) to read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(h) * * *

(103) ASTM D6784–02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved April 1, 2008; IBR approved for §§ 63.2465(d); 63.11646(a); and 63.11647(a) and (d); and tables 1, 2, 5, 11, 12t, 13, 14, and 15 to subpart DDDDD; tables 4 and 5 to subpart JJJJJ; tables 4 and 6 to subpart KKKKK; table 5 to subpart UUUUU; appendix A to subpart UUUUU; and table 4 to subpart JJJJJJ.

* * * * *

Subpart DDDDD—National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

■ 3. Section 63.7500 is amended by revising paragraphs (a) introductory text, (a)(1), (c), and (e) to read as follows:

§ 63.7500 What emission limitations, work practice standards, and operating limits must I meet?

(a) You must meet the requirements in paragraphs (a)(1) through (3) of this section, except as provided in paragraphs (b) through (e) of this section. You must meet these requirements at all times the affected unit is operating, except as provided in paragraph (f) of this section.

(1) You must meet each emission limit and work practice standard in Tables 1 through 3 and 11 through 15 to this subpart that applies to your boiler or process heater, for each boiler or process heater at your source, except as provided under § 63.7522. The output-based emission limits, in units of pounds per million Btu of steam output, in Table 1 or 2 to this subpart are an alternative applicable only to boilers and process heaters that generate either steam, cogenerate steam with electricity,

or both. The output-based emission limits, in units of pounds per megawatt-hour, in Table 1 or 2 to this subpart are an alternative applicable only to boilers that generate only electricity. Boilers that perform multiple functions (cogeneration and electricity generation) or supply steam to common headers would calculate a total steam energy output using Equation 1 of § 63.7575 to demonstrate compliance with the output-based emission limits, in units of pounds per million Btu of steam output, in Table 1 or 2 to this subpart. If you operate a new boiler or process heater, you can choose to comply with alternative limits as discussed in paragraphs (a)(1)(i) through (iv) of this section, but on or after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart. If you operate an existing boiler or process heater, you can choose to comply with alternative limits as discussed in paragraph (a)(1)(v) of this section, but on or after October 6, 2025 you must comply with the emission limits in Table 2 to this subpart.

(i) If your boiler or process heater commenced construction or reconstruction after June 4, 2010, and before May 20, 2011, you may comply with the emission limits in Table 11 or 14 to this subpart until January 31, 2016.

(ii) If your boiler or process heater commenced construction or reconstruction on or after May 20, 2011, and before December 23, 2011, you may comply with the emission limits in Table 12 or 14 to this subpart until January 31, 2016.

(iii) If your boiler or process heater commenced construction or reconstruction on or after December 23, 2011, and before April 1, 2013, you may comply with the emission limits in Table 13 or 14 to this subpart until January 31, 2016.

(iv) If you operate a new boiler or process heater, you must comply with either the emission limits in Table 1 to this subpart or the emission limits in Table 14 to this subpart until you must comply with the emission limits in Table 1.

(v) If you operate an existing boiler or process heater, you must comply with either the emission limits in Table 2 to this subpart or the emission limits in Table 15 to this subpart until you must comply with the emission limits in Table 2.

* * * * *

(c) Limited-use boilers and process heaters must complete a tune-up every 5 years as specified in § 63.7540. They are not subject to the emission limits in Tables 1 and 2 or Tables 11 through 15 to this subpart, the annual tune-up, or the energy assessment requirements in Table 3 to this subpart, or the operating limits in Table 4 to this subpart.

* * * * *

(e) Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity of less than or equal to 5 million Btu per hour must complete a tune-up every 5 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory with a heat input capacity greater than 5 million Btu per hour and less than 10 million Btu per hour must complete a tune-up every 2 years as specified in § 63.7540. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or Tables 11 through 15 to this subpart, or the operating limits in Table 4 to this subpart.

* * * * *

■ 4. Section 63.7505 is amended by revising paragraph (c) to read as follows:

§ 63.7505 What are my general requirements for complying with this subpart?

* * * * *

(c) You must demonstrate compliance with all applicable emission limits using performance stack testing, fuel analysis, or continuous monitoring systems (CMS), including a continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS), continuous parameter monitoring system (CPMS), or particulate matter continuous parameter monitoring system (PM CPMS), where applicable. You may demonstrate compliance with the applicable emission limit for hydrogen chloride (HCl), mercury, or total selected metals (TSM) using fuel analysis if the emission rate calculated according to § 63.7530(c) is less than the applicable emission limit. For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard. Otherwise, you must demonstrate compliance for HCl, mercury, or TSM using performance stack testing, if subject to an applicable emission limit listed in Table 1 or 2 or Tables 11 through 15 to this subpart.

* * * * *

■ 5. Section 63.7510 is amended by revising paragraphs (a) introductory text, (b), (c), (f), and (j) to read as follows:

§ 63.7510 What are my initial compliance requirements and by what date must I conduct them?

(a) For each boiler or process heater that is required or that you elect to demonstrate compliance with any of the applicable emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart through performance (stack) testing, your initial compliance requirements include all the following:

* * * * *

(b) For each boiler or process heater that you elect to demonstrate compliance with the applicable emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart for HCl, mercury, or TSM through fuel analysis, your initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to § 63.7521 and Table 6 to this subpart and establish operating limits according to § 63.7530 and Table 8 to this subpart. The fuels described in paragraphs (a)(2)(i) and (ii) of this section are exempt from these fuel analysis and operating limit requirements. The fuels described in paragraph (a)(2)(ii) of this section are exempt from the chloride fuel analysis and operating limit requirements. Boilers and process heaters that use a CEMS for mercury or HCl are exempt from the performance testing and operating limit requirements specified in paragraph (a) of this section for the HAP for which CEMS are used.

(c) If your boiler or process heater is subject to a carbon monoxide (CO) limit, your initial compliance demonstration for CO is to conduct a performance test for CO according to Table 5 to this subpart or conduct a performance evaluation of your continuous CO monitor, if applicable, according to § 63.7525(a). Boilers and process heaters that use a CO CEMS to comply with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart, as specified in § 63.7525(a), are exempt from the initial CO performance testing and oxygen concentration operating limit requirements specified in paragraph (a) of this section.

* * * * *

(f) For new or reconstructed affected sources (as defined in § 63.7490), you must complete the initial compliance demonstration with the emission limits no later than July 30, 2013, or within 180 days after startup of the source, whichever is later.

(1) If you are demonstrating compliance with an emission limit in Tables 11 through 13 to this subpart that is less stringent than the applicable

emission limit in Table 14 to this subpart, you must demonstrate compliance with the applicable emission limit in Table 14 no later than July 29, 2016.

(2) If you are demonstrating compliance with an emission limit in Table 14 to this subpart that is less stringent than the applicable emission limit in Table 1 to this subpart, you must demonstrate compliance with the applicable emission limit in Table 1 no later than October 6, 2025.

* * * * *

(j) For existing affected sources (as defined in § 63.7490) that have not operated between the effective date of the rule and the compliance date that is specified for your source in § 63.7495, you must complete the initial compliance demonstration, if subject to the emission limits in Table 2 or 14 to this subpart, as applicable, as specified in paragraphs (a) through (d) of this section, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete an initial tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) no later than 30 days after the re-start of the affected source and, if applicable, complete the one-time energy assessment specified in Table 3 to this subpart, no later than the compliance date specified in § 63.7495.

* * * * *

■ 6. Section 63.7515 is amended by revising paragraphs (b), (c), (e), (g), and (i) to read as follows:

§ 63.7515 When must I conduct subsequent performance tests, fuel analyses, or tune-ups?

* * * * *

(b) If your performance tests for a given pollutant for at least 2 consecutive years show that your emissions are at or below 75 percent of the emission limit (or, in limited instances as specified in Tables 1 and 2 or 11 through 15 to this subpart, at or below the emission limit) for the pollutant, and if there are no changes in the operation of the individual boiler or process heater or air pollution control equipment that could increase emissions, you may choose to conduct performance tests for the pollutant every third year. Each such performance test must be conducted no more than 37 months after the previous performance test. If you elect to demonstrate compliance using emission averaging under § 63.7522, you must continue to conduct performance tests annually. The requirement to test at maximum chloride input level is waived unless the stack test is conducted for HCl. The requirement to test at maximum mercury input level is waived unless the stack test is conducted for mercury. The requirement to test at maximum TSM input level is waived unless the stack test is conducted for TSM.

(c) If a performance test shows emissions exceeded the emission limit or 75 percent of the emission limit (as specified in Tables 1 and 2 or 11 through 15 to this subpart) for a pollutant, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 2-year period meet the required level (at or below 75 percent of the emission limit, as specified in Tables 1 and 2 or 11 through 15).

* * * * *

(e) If you demonstrate compliance with the mercury, HCl, or TSM based on fuel analysis, you must conduct a monthly fuel analysis according to § 63.7521 for each type of fuel burned that is subject to an emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart. You may comply with this monthly requirement by completing the fuel analysis any time within the calendar month as long as the analysis is separated from the previous analysis by at least 14 calendar days. If you burn a new type of fuel, you must conduct a fuel analysis before burning the new type of fuel in your boiler or process heater. You must still meet all applicable continuous compliance requirements in § 63.7540. If each of 12 consecutive monthly fuel analyses demonstrates 75 percent or less of the compliance level, you may decrease the fuel analysis frequency to quarterly for that fuel. If any quarterly sample exceeds 75 percent of the compliance level or you begin burning a new type of fuel, you must return to monthly monitoring for that fuel, until 12 months of fuel analyses are again less than 75 percent of the compliance level. If sampling is conducted on 1 day per month, samples should be no less than 14 days apart, but if multiple samples are taken per month, the 14-day restriction does not apply.

* * * * *

(g) For affected sources (as defined in § 63.7490) that have not operated since the previous compliance demonstration and more than 1 year has passed since the previous compliance demonstration, you must complete the subsequent compliance demonstration, if subject to the emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart, no later than 180 days after the re-start of the affected source and according to the applicable provisions in § 63.7(a)(2) as cited in Table 10 to this subpart. You must complete a subsequent tune-up by following the procedures described in § 63.7540(a)(10)(i) through (vi) and the schedule described in § 63.7540(a)(13) for units that are not operating at the time of their scheduled tune-up.

* * * * *

(i) If you operate a CO CEMS that meets the Performance Specifications outlined in § 63.7525(a)(3) to demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart, you are not required to conduct CO performance tests and are not subject to the oxygen concentration operating limit requirement specified in § 63.7510(a).

■ 7. Section 63.7520 is amended by revising paragraph (d) to read as follows:

§ 63.7520 What stack tests and procedures must I use?

* * * * *

(d) You must conduct a minimum of three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must comply with the minimum applicable sampling times or volumes specified in Tables 1 and 2 or 11 through 15 to this subpart.

* * * * *

■ 8. Section 63.7521 is amended by revising paragraphs (a) and (c)(1)(ii) to read as follows:

§ 63.7521 What fuel analyses, fuel specification, and procedures must I use?

(a) For solid and liquid fuels, you must conduct fuel analyses for chloride and mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. For solid fuels and liquid fuels, you must also conduct fuel analyses for TSM if you are opting to comply with the TSM alternative standard. For gas 2 (other) fuels, you must conduct fuel analyses for mercury according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable. For gaseous fuels, you may not use fuel analyses to comply with the TSM alternative standard or the HCl standard. For purposes of complying with this section, a fuel gas system that consists of multiple gaseous fuels collected and mixed with each other is considered a single fuel type and sampling and analysis is only required on the combined fuel gas system that will feed the boiler or process heater.

Sampling and analysis of the individual gaseous streams prior to combining is not required. You are not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. You are required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury, HCl, or TSM in Tables 1 and 2 or 11 through 15 to this subpart. Gaseous and liquid fuels are exempt from the sampling requirements in paragraphs (c) and (d) of this section.

* * * * *

(c) * * *

(1) * * *

(ii) Each composite sample will consist of a minimum of three samples collected at approximately equal intervals during the testing period for sampling during performance stack testing.

* * * * *

■ 9. Section 63.7522 is amended by revising paragraphs (b) introductory text, (d), (e)(1), (e)(2), (h), and (j)(1) to read as follows:

§ 63.7522 Can I use emissions averaging to comply with this subpart?

* * * * *

(b) For a group of two or more existing boilers or process heaters in the same subcategory that each vent to a separate stack, you may average PM (or TSM), HCl, or mercury emissions among existing units to demonstrate compliance with the limits in Table 2 or 15 to this subpart as specified in paragraphs (b)(1) through (3) of this section, if you satisfy the requirements in paragraphs (c) through (g) of this section.

* * * * *

(d) The averaged emissions rate from the existing boilers and process heaters participating in the emissions averaging option must not exceed 90 percent of the limits in Table 2 or 15 to this subpart at all times the affected units are subject to numeric emission limits following the compliance date specified in § 63.7495.

(e) * * *

(1) You must use Equation 1a or 1b or 1c to this paragraph (e)(1) to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option for that pollutant do not exceed the emission limits in Table 2 or 15 to this subpart. Use Equation 1a if you are complying with the emission limits on a heat input basis, use Equation 1b if you are complying with the emission limits on a steam generation (output) basis, and use Equation 1c if you are complying with the emission limits on a electric generation (output) basis.

Equation 1a to paragraph (e)(1)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Hm) \div \sum_{i=1}^{n} Hm \qquad \text{(Eq. 1a)}$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).

Hm = Maximum rated heat input capacity of unit, i, in units of million Btu per hour.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

Equation 1b to paragraph (e)(1)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times So) \div \sum_{i=1}^{n} So \qquad \text{(Eq. 1b)}$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of steam output.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of steam output. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c). If you are taking credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, Eadj, determined according to § 63.7533 for that unit.

So = Maximum steam output capacity of unit, i, in units of million Btu per hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

Equation 1c to paragraph (e)(1)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Ho) \div \sum_{i=1}^{n} Ho \qquad \text{(Eq. 1c)}$$

Where:

AveWeightedEmissions = Average weighted emissions for PM (or TSM), HCl, or mercury, in units of pounds per megawatt hour.

Er = Emission rate (as determined during the initial compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per megawatt hour. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable

credit for energy conservation measures from a unit according to § 63.7533, use the adjusted emission level for that unit, Eadj, determined according to § 63.7533 for that unit.

Eo = Maximum electric generating output capacity of unit, i, in units of megawatt hour, as defined in § 63.7575.

n = Number of units participating in the emissions averaging option.

1.1 = Required discount factor.

(2) If you are not capable of determining the maximum rated heat input capacity of one or more boilers that generate steam, you may use Equation 2 to this paragraph (e)(2) as an alternative to using Equation 1a of paragraph (e)(1) of this section to demonstrate that the PM (or TSM), HCl, or mercury emissions from all existing units participating in the emissions averaging option do not exceed the emission limits for that pollutant in Table 2 or 15 to this subpart that are in pounds per million Btu of heat input.

Equation 2 to paragraph (e)(2)

$$AveWeightedEmissions = 1.1 \times \sum_{i=1}^{n} (Er \times Sm \times Cfi) \div \sum_{i=1}^{n} (Sm \times Cfi) \quad (Eq.\ 2)$$

Where:

AveWeightedEmissions = Average weighted emission level for PM (or TSM), HCl, or mercury, in units of pounds per million Btu of heat input.

Er = Emission rate (as determined during the most recent compliance demonstration) of PM (or TSM), HCl, or mercury from unit, i, in units of pounds per million Btu of heat input. Determine the emission rate for PM (or TSM), HCl, or mercury by performance testing according to Table 5 to this subpart, or by fuel analysis for HCl or mercury or TSM using the applicable equation in § 63.7530(c).

Sm = Maximum steam generation capacity by unit, i, in units of pounds per hour.

Cfi = Conversion factor, calculated from the most recent compliance test, in units of million Btu of heat input per pounds of steam generated for unit, i.

1.1 = Required discount factor.

* * * * *

(h) For a group of two or more existing affected units, each of which vents through a single common stack, you may average PM (or TSM), HCl, or mercury emissions to demonstrate compliance with the limits for that pollutant in Table 2 or 15 to this subpart if you satisfy the requirements in paragraph (i) or (j) of this section.

* * * * *

(j) * * *

(1) Conduct performance tests according to procedures specified in § 63.7520 in the common stack if affected units from other subcategories vent to the common stack. The emission limits that the group must comply with are determined by the use of Equation 6 to this paragraph (j)(1).

Equation 6 to paragraph (j)(1)

$$En = \sum_{i=1}^{n} (ELi \times Hi) \div \sum_{i=1}^{n} Hi \quad (Eq.\ 6)$$

Where:

En = HAP emission limit, pounds per million British thermal units (lb/MMBtu) or parts per million (ppm).

ELi = Appropriate emission limit from Table 2 or 15 to this subpart for unit i, in units of lb/MMBtu or ppm.

Hi = Heat input from unit i, MMBtu.

* * * * *

■ 10. Section 63.7525 is amended by revising paragraphs (a) introductory text, (a)(1), (a)(2) introductory text, (a)(2)(ii), (iv), and (vi), (l) introductory text, and (m) introductory text to read as follows:

§ 63.7525 What are my monitoring, installation, operation, and maintenance requirements?

(a) If your boiler or process heater is subject to a CO emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart, you must install, operate, and maintain an oxygen analyzer system, as defined in § 63.7575, or install, certify, operate and maintain continuous emission monitoring systems for CO and oxygen (O_2) (or carbon dioxide (CO_2)) according to the procedures in paragraphs (a)(1) through (6) of this section.

(1) Install the CO CEMS including an O_2 (or CO_2) analyzer by the compliance date specified in § 63.7495. The CO and O_2 (or CO_2) levels shall be monitored at the same location at the outlet of the boiler or process heater. An owner or operator may determine compliance with the CO emissions limit using a CO_2 analyzer as the diluent monitor. If a CO_2 analyzer is used as the diluent monitor, EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, for the fuel type(s) being burned in the unit and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to calculate the emissions corrected to 3 percent O_2 using the measured CO_2 percentage, and must also take into account that the 3 percent oxygen correction is to be done on a dry basis. The equations used to calculate the emissions, must also account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. The methodology used to calculate the CO emissions and the methodology used to account for any CO_2 being added to, or removed from the emissions gas stream shall be detailed and approved in the site-specific monitoring plan developed according to § 63.7505(d).

(2) To demonstrate compliance with the applicable alternative CO CEMS emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart, you must install, certify, operate, and maintain a CO CEMS and an oxygen analyzer according to the applicable procedures under Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B; part 75 of this chapter (if an CO_2 analyzer is used); the site-specific monitoring plan developed according to § 63.7505(d); and the requirements in § 63.7540(a)(8) and this paragraph (a). Any boiler or process heater that has a CO CEMS that is compliant with Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, a site-specific monitoring plan developed according to § 63.7505(d), and the requirements in § 63.7540(a)(8) and this paragraph (a) must use the CO CEMS to comply with the applicable alternative CO CEMS

emission standard listed in Table 1 or 2 or Tables 11 through 15 to this subpart.

* * * * *

(ii) During each relative accuracy test run of the CO CEMS, you must collect emission data for CO concurrently using both the CO CEMS and Method 10, 10A, or 10B at 40 CFR part 60, appendix A–4. The relative accuracy testing must be conducted at representative operating conditions.

* * * * *

(iv) Any CO CEMS that does not comply with this paragraph (a) cannot be used to meet any requirement in this subpart to demonstrate compliance with a CO emission limit listed in Table 1 or 2 or Tables 11 through 15 to this subpart.

* * * * *

(vi) When CO_2 is used to correct CO emissions and CO_2 is measured on a wet basis, if needed, correct for moisture as follows: Install, operate, maintain, and quality assure a continuous moisture monitoring system for measuring and recording the moisture content of the flue gases, in order to correct the measured hourly volumetric flow rates for moisture when calculating CO concentrations. The following continuous moisture monitoring systems are acceptable: a continuous moisture sensor; an oxygen analyzer (or analyzers) capable of measuring O_2 both on a wet basis and on a dry basis; or a stack temperature sensor and a moisture look-up table, *i.e.,* a psychrometric chart (for saturated gas streams following wet scrubbers or other demonstrably saturated gas streams, only). The moisture monitoring system shall include as a component the automated data acquisition and handling system (DAHS) for recording and reporting both the raw data (*e.g.,* hourly average wet- and dry-basis O_2 values) and the hourly average values of the stack gas moisture content derived from those data. When a moisture look-up table is used, the moisture monitoring system shall be represented as a single component, the certified DAHS, in the monitoring plan for the unit or common stack.

* * * * *

(l) For each unit for which you decide to demonstrate compliance with the mercury or HCl emissions limits in Table 1 or 2 or Tables 11 through 15 to this subpart by use of a CEMS for mercury or HCl, you must install, certify, maintain, and operate a CEMS measuring emissions discharged to the atmosphere and record the output of the system as specified in paragraphs (l)(1) through (8) of this section. For HCl, this option for an affected unit takes effect on the date of approval of a site-specific monitoring plan.

* * * * *

(m) If your unit is subject to a HCl emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart and you have an acid gas wet scrubber or dry sorbent injection control technology and you elect to use an SO_2 CEMS to demonstrate continuous compliance with the HCl emission limit, you must install the monitor at the outlet of the boiler or process heater, downstream of all emission control devices, and you must install, certify, operate, and maintain the CEMS according to either part 60 or part 75 of this chapter.

* * * * *

■ 11. Section 63.7530 is amended by revising paragraphs (b)(4)(ii)(E), (b)(4)(iii), and (h) to read as follows:

§ 63.7530 How do I demonstrate initial compliance with the emission limitations, fuel specifications and work practice standards?

* * * * *

(b) * * *

(4) * * *

(ii) * * *

(E) Use EPA Method 5 of appendix A to part 60 of this chapter to determine PM emissions. For each performance test, conduct three separate runs under the conditions that exist when the affected source is operating at the highest load or capacity level reasonably expected to occur. Conduct each test run to collect a minimum sample volume specified in Table 1 or 2 or Tables 11 through 15 to this subpart, as applicable, for determining compliance with a new source limit or an existing source limit. Calculate the average of the results from three runs to determine compliance. You need not determine the PM collected in the impingers (''back half'') of the Method 5 particulate sampling train to demonstrate compliance with the PM standards in this subpart. This shall not preclude the permitting authority from requiring a determination of the ''back half'' for other purposes.

* * * * *

(iii) For a particulate wet scrubber, you must establish the minimum pressure drop and liquid flow rate as defined in § 63.7575, as your operating limits during the three-run performance test during which you demonstrate compliance with your applicable limit. If you use a wet scrubber and you conduct separate performance tests for PM and TSM emissions, you must establish one set of minimum scrubber liquid flow rate and pressure drop operating limits. If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests.

* * * * *

(h) If you own or operate a unit subject to emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart, you must meet the work practice standard according to Table 3 to this subpart. During startup and shutdown, you must only follow the work practice standards according to items 5 and 6 of Table 3 to this subpart.

* * * * *

■ 12. Section 63.7533 is amended by revising paragraphs (a), (e), and (f) to read as follows:

§ 63.7533 Can I use efficiency credits earned from implementation of energy conservation measures to comply with this subpart?

(a) If you elect to comply with the alternative equivalent output-based emission limits, instead of the heat input-based limits listed in Table 2 or 15 to this subpart, and you want to take credit for implementing energy conservation measures identified in an energy assessment, you may demonstrate compliance using efficiency credits according to the procedures in this section. You may use this compliance approach for an existing affected boiler for demonstrating initial compliance according to § 63.7522(e) and for demonstrating monthly compliance according to § 63.7522(f). Owners or operators using this compliance approach must establish an emissions benchmark, calculate and document the efficiency credits, develop an Implementation Plan, comply with the general reporting requirements, and apply the efficiency credit according to the procedures in paragraphs (b) through (f) of this section. You cannot use this compliance approach for a new or reconstructed affected boiler. Additional guidance from the Department of Energy on efficiency credits is available at *https://www.epa.gov/ttn/atw/boiler/boilerpg.html.*

* * * * *

(e) The emissions rate as calculated using Equation 20 in paragraph (f) of this section from each existing boiler participating in the efficiency credit option must be in compliance with the limits in Table 2 or 15 to this subpart at all times the affected unit is subject to numeric emission limits, following

the compliance date specified in § 63.7495.

(f) You must use Equation 20 of this paragraph (f) to demonstrate initial compliance by demonstrating that the emissions from the affected boiler participating in the efficiency credit compliance approach do not exceed the emission limits in Table 2 or 15 to this subpart.

Equation 20 to paragraph (f)

$$E_{adj} = E_m \times (1 - ECredits) \quad (Eq.\ 20)$$

Where:

E_{adj} = Emission level adjusted by applying the efficiency credits earned, lb per million Btu steam output (or lb per MWh) for the affected boiler.

E_m = Emissions measured during the performance test, lb per million Btu steam output (or lb per MWh) for the affected boiler.

ECredits = Efficiency credits from Equation 19 to paragraph (c)(3)(i) of this section for the affected boiler.

* * * * *

■ 13. Section 63.7540 is amended by revising paragraphs (a) introductory text, (a)(8) introductory text, (a)(8)(ii), (a)(9), (a)(15) introductory text, (a)(19) introductory text, and (b) to read as follows:

§ 63.7540 How do I demonstrate continuous compliance with the emission limitations, fuel specifications and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit in Tables 1 and 2 or 11 through 15 to this subpart, the work practice standards in Table 3 to this subpart, and the operating limits in Table 4 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (19) of this section.

* * * * *

(8) To demonstrate compliance with the applicable alternative CO CEMS emission limit listed in Table 1 or 2 or Tables 11 through 15 to this subpart, you must meet the requirements in paragraphs (a)(8)(i) through (iv) of this section.

* * * * *

(ii) Maintain a CO emission level below or at your applicable alternative CO CEMS-based standard in Table 1 or 2 or Tables 11 through 15 to this subpart at all times the affected unit is subject to numeric emission limits.

* * * * *

(9) The owner or operator of a boiler or process heater using a PM CPMS or a PM CEMS to meet requirements of this subpart shall install, certify (PM CEMS only), operate, and maintain the PM CPMS or PM CEMS in accordance with your site-specific monitoring plan as required in § 63.7505(d).

* * * * *

(15) If you are using a CEMS to measure HCl emissions to meet requirements of this subpart, you must install, certify, operate, and maintain the HCl CEMS as specified in paragraphs (a)(15)(i) and (ii) of this section. This option for an affected unit takes effect on the date of approval of a site-specific monitoring plan.

* * * * *

(19) If you choose to comply with the PM filterable emissions limit by using PM CEMS you must install, certify, operate, and maintain a PM CEMS and record the output of the PM CEMS as specified in paragraphs (a)(19)(i) through (vii) of this section. The compliance limit will be expressed as a 30-day rolling average of the numerical emissions limit value applicable for your unit in Table 1 or 2 or Tables 11 through 15 to this subpart.

* * * * *

(b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 through 4 or 11 through 15 to this subpart that apply to you. These instances are deviations from the emission limits or operating limits, respectively, in this subpart. These deviations must be reported according to the requirements in § 63.7550.

* * * * *

■ 14. Section 63.7545 is amended by revising paragraph (e)(3) to read as follows:

§ 63.7545 What notifications must I submit and when?

* * * * *

(e) * * *

(3) A summary of the maximum CO emission levels recorded during the performance test to show that you have met any applicable emission standard in Table 1 or 2 or Tables 11 through 15 to this subpart, if you are not using a CO CEMS to demonstrate compliance.

* * * * *

■ 15. Section 63.7555 is amended by revising paragraphs (d) introductory text and (d)(5) to read as follows:

§ 63.7555 What records must I keep?

* * * * *

(d) For each boiler or process heater subject to an emission limit in Table 1 or 2 or Tables 11 through 15 to this subpart, you must also keep the applicable records in paragraphs (d)(1) through (11) of this section.

* * * * *

(5) If, consistent with § 63.7515(b), you choose to stack test less frequently than annually, you must keep a record that documents that your emissions in the previous stack test(s) were less than 75 percent of the applicable emission limit (or, in specific instances noted in Tables 1 and 2 or 11 through 15 to this subpart, less than the applicable emission limit), and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the relevant pollutant to increase within the past year.

* * * * *

■ 16. Section 63.7575 is amended by:

■ a. Adding in alphabetical order the definition for "12-month rolling average";

■ b. Revising the definition of "Other gas 1 fuel"; and

■ c. Revising paragraphs (3) and (4) under the definition of "Steam output."

The addition and revisions read as follows:

§ 63.7575 What definitions apply to this subpart?

* * * * *

12-month rolling average means the arithmetic mean of the previous 12 months of valid fuel analysis data. The 12 months should be consecutive, but not necessarily continuous if operations were intermittent.

* * * * *

Other gas 1 fuel means a gaseous fuel that is not natural gas or refinery gas and does not exceed a maximum

mercury concentration of 40 micrograms/cubic meters of gas.

* * * * *

Steam output * * *

(3) For a boiler that generates only electricity, the alternate output-based emission limits would be the appropriate emission limit from Table 1, 2, 14, or 15 to this subpart in units of pounds per million Btu heat input (lb per MWh).

(4) For a boiler that performs multiple functions and produces steam to be used for any combination of paragraphs (1), (2), and (3) of this definition that includes electricity generation of paragraph (3) of this definition, the total energy output, in terms of MMBtu of steam output, is the sum of the energy content of steam sent directly to the process and/or used for heating (S_1), the energy content of turbine steam sent to process plus energy in electricity according to paragraph (2) of this definition (S_2), and the energy content of electricity generated by a electricity only turbine as paragraph (3) of this definition (MW_3) and would be calculated using Equation 1 to this definition. In the case of boilers supplying steam to one or more common headers, S_1, S_2, and $MW_{(3)}$ for each boiler would be calculated based on its (steam energy) contribution (fraction of total steam energy) to the common header.

Equation 1 to the definition *Steam Output*

$$SO_M = S_1 + S_2 + (MW_{(3)} \, x \, CFn) \qquad \text{(Eq. 1)}$$

Where:

SO_M = Total steam output for multi-function boiler, MMBtu.

S_1 = Energy content of steam sent directly to the process and/or used for heating, MMBtu.

S_2 = Energy content of turbine steam sent to the process plus energy in electricity according to paragraph (2) of this definition, MMBtu.

$MW_{(3)}$ = Electricity generated according to paragraph (3) of this definition, MWh.

CFn = Conversion factor for the appropriate subcategory for converting electricity generated according to paragraph (3) of this definition to equivalent steam energy, MMBtu/MWh.

CFn for emission limits for boilers in the unit designed to burn solid fuel subcategory = 10.8.

CFn PM and CO emission limits for boilers in one of the subcategories of units designed to burn coal = 11.7.

CFn PM and CO emission limits for boilers in one of the subcategories of units designed to burn biomass = 12.1.

CFn for emission limits for boilers in one of the subcategories of units designed to burn liquid fuel = 11.2.

CFn for emission limits for boilers in the unit designed to burn gas 2 (other) subcategory = 6.2.

* * * * *

■ 17. Table 1 to subpart DDDDD of part 63 is revised to read as follows:

TABLE 1 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]

[As stated in § 63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	2.1E–04 [a] lb per MMBtu of heat input.	2.9E–04 [a] lb per MMBtu of steam output or 2.7E–03 [a] lb per MWh.	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.0E–07 [a] lb per MMBtu of heat input.	8.7E–07 [a] lb per MMBtu of steam output or 1.1E–05 [a] lb per MWh.	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
2. Units designed to burn coal/solid fossil fuel.	a. Filterable PM (or TSM).	1.1E–03 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	1.1E–03 lb per MMBtu of steam output or 1.4E–02 lb per MWh; or (2.7E–05 lb per MMBtu of steam output or 2.9E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. Carbon monoxide (CO) (or CEMS).	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
4. Stokers/others designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3-percent oxygen [d], 30-day rolling average).	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.

TABLE 1 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]—Continued

[As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 30-day rolling average).	1.2E–01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average.	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	590 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 30-day rolling average).	6.1E–01 lb per MMBtu of steam output or 6.5 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.3E–02 lb per MMBtu of heat input; or (2.6E–05 lb per MMBtu of heat input).	1.4E–02 lb per MMBtu of steam output or 1.9E–01 lb per MWh; or (2.7E–05 lb per MMBtu of steam output or 3.7E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen.	4.3E–01 lb per MMBtu of steam output or 5.1 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.0E–02 lb per MMBtu of heat input; or (5.0E–03 lb per MMBtu of heat input).	3.5E–02 lb per MMBtu of steam output or 4.2E–01 lb per MWh; or (5.2E–03 lb per MMBtu of steam output or 7.0E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solids.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 30-day rolling average).	1.3E–01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	4.1E–03 lb per MMBtu of heat input; or (8.4E–06 [a] lb per MMBtu of heat input).	5.0E–03 lb per MMBtu of steam output or 5.8E–02 lb per MWh; or (1.1E–05 [a] lb per MMBtu of steam output or 1.2E–04 [a] lb per MWh).	Collect a minimum of 3 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	220 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 10-day rolling average).	0.18 lb per MMBtu of steam output or 2.5 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.0E–02 lb per MMBtu of heat input; or (8.0E–03 lb per MMBtu of heat input).	3.1E–02 lb per MMBtu of steam output or 4.2E–01 lb per MWh; or (8.1E–03 lb per MMBtu of steam output or 1.2E–01 lb per MWh).	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	330 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 10-day rolling average).	3.5E–01 lb per MMBtu of steam output or 3.6 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.5E–03 lb per MMBtu of heat input; or (3.9E–05 lb per MMBtu of heat input).	3.4E–03 lb per MMBtu of steam output or 3.5E–02 lb per MWh; or (5.2E–05 lb per MMBtu of steam output or 5.5E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solids.	a. CO	910 ppm by volume on a dry basis corrected to 3-percent oxygen.	1.1 lb per MMBtu of steam output or 1.0E+01 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.1E–02 lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	2.0E–02 lb per MMBtu of steam output or 1.6E–01 lb per MWh; or (5.1E–05 lb per MMBtu of steam output or 4.1E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to burn biomass/bio-based solids.	a. CO (or CEMS)	180 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3-percent oxygen [d], 30-day rolling average).	0.22 lb per MMBtu of steam output or 2.0 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.6E–02 lb per MMBtu of heat input; or (4.4E–04 lb per MMBtu of heat input).	3.3E–02 lb per MMBtu of steam output or 3.7E–01 lb per MWh; or (5.5E–04 lb per MMBtu of steam output or 6.2E–03 lb per MWh).	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel.	a. HCl	1.5E–04 [a] lb per MMBtu of heat input.	1.7E–04 [a] lb per MMBtu of steam output or 2.1E–03 [a] lb per MWh.	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.

TABLE 1 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]—Continued

[As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	b. Mercury	4.8E–07 [a] lb per MMBtu of heat input.	5.3E–07 [a] lb per MMBtu of steam output or 6.7E–06 [a] lb per MWh.	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.9E–03 lb per MMBtu of heat input; or (6.1E–06 [a] lb per MMBtu of heat input).	2.1E–03 lb per MMBtu of steam output or 2.7E–02 lb per MWh; or (6.7E–6 [a] lb per MMBtu of steam output or 8.5E–5 [a] lb per MWh).	Collect a minimum of 3 dscm per run.
16. Units designed to burn light liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.1E–03 [a] lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	1.2E–03 [a] lb per MMBtu of steam output or 1.6E–02 [a] lb per MWh; or (3.2E–05 lb per MMBtu of steam output or 4.0E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average based on stack test.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.3E–02 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	2.5E–02 lb per MMBtu of steam output or 3.2E–01 lb per MWh; or (9.4E–04 lb per MMBtu of steam output or 1.2E–02 lb per MWh).	Collect a minimum of 4 dscm per run.
18. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.16 lb per MMBtu of steam output or 1.0 lb per MWh.	1 hr minimum sampling time.
	b. HCl	1.7E–03 lb per MMBtu of heat input	2.9E–03 lb per MMBtu of steam output or 1.8E–02 lb per MWh.	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	1.4E–05 lb per MMBtu of steam output or 8.3E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.
	d. Filterable PM (or TSM).	7.3E–03 lb per MMBtu of heat input; or (2.1E–04 lb per MMBtu of heat input).	1.3E–02 lb per MMBtu of steam output or 7.6E–02 lb per MWh; or (3.5E–04 lb per MMBtu of steam output or 2.2E–03 lb per MWh).	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to §63.7515 if all of the other provisions of §63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see §63.14.

[c] If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in Table 14 to this subpart. On and after October 6, 2025 you must comply with the emission limits in this Table 1.

[d] An owner or operator may determine compliance with the carbon monoxide emissions limit using CO_2 as a diluent correction in place of oxygen as described in §63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to §63.7505(d).

■ 18. Table 2 to subpart DDDDD of part 63 is revised to read as follows:

TABLE 2 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS [d]

[As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	2.0E–02 lb per MMBtu of heat input	2.3E–02 lb per MMBtu of steam output or 0.26 lb per MWh.	For M26A, collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.

TABLE 2 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS[d]—Continued

[As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	b. Mercury	5.4E–06 lb per MMBtu of heat input	6.2E–06 lb per MMBtu of steam output or 6.9E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784[b] collect a minimum of 3 dscm.
2. Units design to burn coal/solid fossil fuel.	a. Filterable PM (or TSM).	3.9E–02 lb per MMBtu of heat input; or (5.3E–05 lb per MMBtu of heat input).	4.1E–02 lb per MMBtu of steam output or 4.8E–01 lb per MWh; or (5.6E–05 lb per MMBtu of steam output or 6.5E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
4. Stokers/others designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	150 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	0.14 lb per MMBtu of steam output or 1.6 lb per MWh; 3-run average.	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	1.3E–01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average.	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	1.1 lb per MMBtu of steam output or 13 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.4E–02 lb per MMBtu of heat input; or (2.0E–04 lb per MMBtu of heat input).	4.0E–02 lb per MMBtu of steam output or 4.8E–01 lb per MWh; or (2.4E–04 lb per MMBtu of steam output or 2.8E–03 lb per MWh).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen.	4.2E–01 lb per MMBtu of steam output or 5.1 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.2E–01 lb per MMBtu of heat input; or (5.0E–03 lb per MMBtu of heat input).	3.7E–01 lb per MMBtu of steam output or 4.5 lb per MWh; or (5.9E–03 lb per MMBtu of steam output or 7.0E–02 lb per MWh).	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solid.	a. CO (or CEMS)	210 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	2.1E–01 lb per MMBtu of steam output or 2.3 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	7.4E–03 lb per MMBtu of heat input; or (6.4E–05 lb per MMBtu of heat input).	9.2E–03 lb per MMBtu of steam output or 0.11 lb per MWh; or (8.0E–05 lb per MMBtu of steam output or 9.0E–04 lb per MWh).	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solid.	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 10-day rolling average).	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	4.1E–02 lb per MMBtu of heat input; or (8.0E–03 lb per MMBtu of heat input).	4.2E–02 lb per MMBtu of steam output or 5.8E–01 lb per MWh; or (8.1E–03 lb per MMBtu of steam output or 0.12 lb per MWh).	Collect a minimum of 2 dscm per run.

TABLE 2 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS[d]—Continued

[As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid.	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 10-day rolling average).	8.4E–01 lb per MMBtu of steam output or 8.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.8E–01 lb per MMBtu of heat input; or (2.0E–03 lb per MMBtu of heat input).	2.5E–01 lb per MMBtu of steam output or 2.6 lb per MWh; or (2.8E–03 lb per MMBtu of steam output or 2.8E–02 lb per MWh).	Collect a minimum of 1 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solid.	a. CO	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen.	2.4 lb per MMBtu of steam output or 12 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.0E–02 lb per MMBtu of heat input; or (5.8E–03 lb per MMBtu of heat input).	5.5E–02 lb per MMBtu of steam output or 2.8E–01 lb per MWh; or (1.6E–02 lb per MMBtu of steam output or 8.1E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate units designed to burn biomass/bio-based solid.	a. CO (or CEMS)	3,500 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	3.5 lb per MMBtu of steam output or 39 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	4.4E–01 lb per MMBtu of heat input; or (4.5E–04 lb per MMBtu of heat input).	5.5E–01 lb per MMBtu of steam output or 6.2 lb per MWh; or (5.7E–04 lb per MMBtu of steam output or 6.3E–03 lb per MWh).	Collect a minimum of 1 dscm per run.
14. Units designed to burn liquid fuel.	a. HCl	1.1E–03 lb per MMBtu of heat input	1.4E–03 lb per MMBtu of steam output or 1.6E–02 lb per MWh.	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	7.3E–07 lb per MMBtu of heat input	8.8E–07 lb per MMBtu of steam output or 1.1E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784[b] collect a minimum of 2 dscm.
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	5.9E–02 lb per MMBtu of heat input; or (2.0E–04 lb per MMBtu of heat input).	7.2E–02 lb per MMBtu of steam output or 8.2E–01 lb per MWh; or (2.5E–04 lb per MMBtu of steam output or 2.8E–03 lb per MWh).	Collect a minimum of 1 dscm per run.
16. Units designed to burn light liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	7.9E–03 lb per MMBtu of heat input; or (6.2E–05 lb per MMBtu of heat input).	9.6E–03 lb per MMBtu of steam output or 1.1E–01 lb per MWh; or (7.5E–05 lb per MMBtu of steam output or 8.6E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average based on stack test.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.2E–01 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	2.7E–01 lb per MMBtu of steam output or 3.1 lb per MWh; or (1.1E–03 lb per MMBtu of steam output or 1.2E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
18. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.16 lb per MMBtu of steam output or 1.0 lb per MWh.	1 hr minimum sampling time.
.....	b. HCl	1.7E–03 lb per MMBtu of heat input	2.9E–03 lb per MMBtu of steam output or 1.8E–02 lb per MWh.	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	1.4E–05 lb per MMBtu of steam output or 8.3E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784[b] collect a minimum of 2 dscm.

TABLE 2 TO SUBPART DDDDD OF PART 63—EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS[d]—Continued

[As stated in §63.7500, you must comply with the following applicable emission limits: [Units with heat input capacity of 10 million Btu per hour or greater]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	d. Filterable PM (or TSM).	7.3E–03 lb per MMBtu of heat input or (2.1E–04 lb per MMBtu of heat input).	1.3E–02 lb per MMBtu of steam output or 7.6E–02 lb per MWh; or (3.5E–04 lb per MMBtu of steam output or 2.2E–03 lb per MWh).	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to §63.7515 if all of the other provisions of §63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see §63.14.

[c] An owner or operator may determine compliance with the carbon monoxide emissions limit be determined using CO_2 as a diluent correction in place of oxygen as described in §63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit and must also take into account that the 3-percent oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to §63.7505(d).

[d] Before October 6, 2025 you may comply with the emission limits in Table 15 to this subpart. On and after October 6, 2025], you must comply with the emission limits in this Table 2.

■ 19. Table 3 of subpart DDDDD of part 63 is amended by revising the entries "5." and "6." to read as follows:

* * * * *

TABLE 3 TO SUBPART DDDDD OF PART 63—WORK PRACTICE STANDARDS

If your unit is . . .	You must meet the following . . .
* * * * * * *	
5. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 15 to this subpart during startup.	a. You must operate all CMS during startup. b. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, liquefied petroleum gas, clean dry biomass, and any fuels meeting the appropriate HCl, mercury and TSM emission standards by fuel analysis. c. You have the option of complying using either of the following work practice standards. (1) If you choose to comply using paragraph (1) of the definition of "startup" in §63.7575, once you start firing fuels that are not clean fuels you must vent emissions to the main stack(s) and engage all of the applicable control devices except limestone injection in fluidized bed combustion (FBC) boilers, dry scrubber, fabric filter, and selective catalytic reduction (SCR). You must start your limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR systems as expeditiously as possible. Startup ends when steam or heat is supplied for any purpose, OR (2) If you choose to comply using paragraph (2) of the definition of "startup" in §63.7575, once you start to feed fuels that are not clean fuels, you must vent emissions to the main stack(s) and engage all of the applicable control devices so as to comply with the emission limits within 4 hours of start of supplying useful thermal energy. You must engage and operate PM control within one hour of first feeding fuels that are not clean fuels[a]. You must start all applicable control devices as expeditiously as possible, but, in any case, when necessary to comply with other standards applicable to the source by a permit limit or a rule other than this subpart that require operation of the control devices. You must develop and implement a written startup and shutdown plan, as specified in §63.7505(e). d. You must comply with all applicable emission limits at all times except during startup and shutdown periods at which time you must meet this work practice. You must collect monitoring data during periods of startup, as specified in §63.7535(b). You must keep records during periods of startup. You must provide reports concerning activities and periods of startup, as specified in §63.7555.
6. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart during shutdown.	You must operate all CMS during shutdown. While firing fuels that are not clean fuels during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR but, in any case, when necessary to comply with other standards applicable to the source that require operation of the control device. If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the following clean fuels: Natural gas, synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, refinery gas, and liquefied petroleum gas.

TABLE 3 TO SUBPART DDDDD OF PART 63—WORK PRACTICE STANDARDS—Continued

If your unit is . . .	You must meet the following . . .
	You must comply with all applicable emissions limits at all times except for startup or shutdown periods conforming with this work practice. You must collect monitoring data during periods of shutdown, as specified in § 63.7535(b). You must keep records during periods of shutdown. You must provide reports concerning activities and periods of shutdown, as specified in § 63.7555.

[a] As specified in § 63.7555(d)(13), the source may request an alternative timeframe with the PM controls requirement to the permitting authority (state, local, or tribal agency) that has been delegated authority for this subpart by EPA. The source must provide evidence that (1) it is unable to safely engage and operate the PM control(s) to meet the "fuel firing + 1 hour" requirement and (2) the PM control device is appropriately designed and sized to meet the filterable PM emission limit. It is acknowledged that there may be another control device that has been installed other than ESP that provides additional PM control (*e.g.,* scrubber).

■ 20. Table 4 to subpart DDDDD of part 63 is amended by revising the column headings to read as follows:

* * * * *

TABLE 4 TO SUBPART DDDDD OF PART 63—OPERATING LIMITS FOR BOILERS AND PROCESS HEATERS

When complying with a numerical emission limit under Table 1, 2, 11, 12, 13, 14, or 15 of this subpart using . . .	You must meet these operating limits . . .
* * * * * * *	

* * * * *

■ 21. Table 7 to subpart DDDDD of part 63 is revised to read as follows:

TABLE 7 TO SUBPART DDDDD OF PART 63—ESTABLISHING OPERATING LIMITS [a] [b]

[As stated in § 63.7520, you must comply with the following requirements for establishing operating limits:]

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
1. PM, TSM, or mercury	a. Wet scrubber operating parameters.	i. Establish a site-specific minimum scrubber pressure drop and minimum flow rate operating limit according to § 63.7530(b).	(1) Data from the scrubber pressure drop and liquid flow rate monitors and the PM, TSM, or mercury performance test.	(a) You must collect scrubber pressure drop and liquid flow rate data every 15 minutes during the entire period of the performance tests. (b) Determine the lowest hourly average scrubber pressure drop and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Electrostatic precipitator operating parameters (option only for units that operate wet scrubbers).	i. Establish a site-specific minimum total secondary electric power input according to § 63.7530(b).	(1) Data from the voltage and secondary amperage monitors during the PM or mercury performance test.	(a) You must collect secondary voltage and secondary amperage for each ESP cell and calculate total secondary electric power input data every 15 minutes during the entire period of the performance tests. (b) Determine the average total secondary electric power input by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	c. Opacity	i. Establish a site-specific maximum opacity level.	(1) Data from the opacity monitoring system during the PM performance test.	(a) You must collect opacity readings every 15 minutes during the entire period of the performance tests. (b) Determine the average hourly opacity reading by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the highest hourly average opacity reading measured during the test run demonstrating compliance with the PM (or TSM) emission limitation.

TABLE 7 TO SUBPART DDDDD OF PART 63—ESTABLISHING OPERATING LIMITS [a] [b]—Continued

[As stated in § 63.7520, you must comply with the following requirements for establishing operating limits:]

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
2. HCl	a. Wet scrubber operating parameters.	i. Establish site-specific minimum effluent pH and flow rate operating limits according to § 63.7530(b).	(1) Data from the pH and liquid flow-rate monitors and the HCl performance test.	(a) You must collect pH and liquid flow-rate data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average pH and liquid flow rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
	b. Dry scrubber operating parameters.	i. Establish a site-specific minimum sorbent injection rate operating limit according to § 63.7530(b). If different acid gas sorbents are used during the HCl performance test, the average value for each sorbent becomes the site-specific operating limit for that sorbent.	(1) Data from the sorbent injection rate monitors and HCl or mercury performance test.	(a) You must collect sorbent injection rate data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average sorbent injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the lowest hourly average of the three test run averages established during the performance test as your operating limit. When your unit operates at lower loads, multiply your sorbent injection rate by the load fraction, as defined in § 63.7575, to determine the required injection rate.
	c. Alternative Maximum SO_2 emission rate.	i. Establish a site-specific maximum SO_2 emission rate operating limit according to § 63.7530(b).	(1) Data from SO_2 CEMS and the HCl performance test.	(a) You must collect the SO_2 emissions data according to § 63.7525(m) during the most recent HCl performance tests. (b) The maximum SO_2 emission rate is equal to the highest hourly average SO_2 emission rate measured during the most recent HCl performance tests.
3. Mercury	a. Activated carbon injection.	i. Establish a site-specific minimum activated carbon injection rate operating limit according to § 63.7530(b).	(1) Data from the activated carbon rate monitors and mercury performance test.	(a) You must collect activated carbon injection rate data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average activated carbon injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the lowest hourly average established during the performance test as your operating limit. When your unit operates at lower loads, multiply your activated carbon injection rate by the load fraction, as defined in § 63.7575, to determine the required injection rate.
4. Carbon monoxide for which compliance is demonstrated by a performance test.	a. Oxygen	i. Establish a unit-specific limit for minimum oxygen level according to § 63.7530(b).	(1) Data from the oxygen analyzer system specified in § 63.7525(a).	(a) You must collect oxygen data every 15 minutes during the entire period of the performance tests. (b) Determine the hourly average oxygen concentration by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the lowest hourly average established during the performance test as your minimum operating limit.

TABLE 7 TO SUBPART DDDDD OF PART 63—ESTABLISHING OPERATING LIMITS [a] [b]—Continued

[As stated in § 63.7520, you must comply with the following requirements for establishing operating limits:]

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
5. Any pollutant for which compliance is demonstrated by a performance test.	a. Boiler or process heater operating load.	i. Establish a unit specific limit for maximum operating load according to § 63.7520(c).	(1) Data from the operating load monitors or from steam generation monitors.	(a) You must collect operating load or steam generation data every 15 minutes during the entire period of the performance test. (b) Determine the average operating load by computing the hourly averages using all of the 15-minute readings taken during each performance test. (c) Determine the highest hourly average of the three test run averages during the performance test, and multiply this by 1.1 (110 percent) as your operating limit.

[a] Operating limits must be confirmed or reestablished during performance tests.

[b] If you conduct multiple performance tests, you must set the minimum liquid flow rate and pressure drop operating limits at the higher of the minimum values established during the performance tests. For a minimum oxygen level, if you conduct multiple performance tests, you must set the minimum oxygen level at the lower of the minimum values established during the performance tests. For maximum operating load, if you conduct multiple performance tests, you must set the maximum operating load at the lower of the maximum values established during the performance tests.

■ 22. Table 8 to subpart DDDDD of part 63 is amended by revising entry "8." to read as follows:

* * * * *

TABLE 8 TO SUBPART DDDDD OF PART 63—DEMONSTRATING CONTINUOUS COMPLIANCE

If you must meet the following operating limits or work practice standards . . .	You must demonstrate continuous compliance by . . .
* * * * * * *	
8. Emission limits using fuel analysis.	a. Conduct monthly fuel analysis for HCl or mercury or TSM according to Table 6 to this subpart; and b. Reduce the data to 12-month rolling averages; and c. Maintain the 12-month rolling average at or below the applicable emission limit for HCl or mercury or TSM in Tables 1 and 2 or 11 through 15 to this subpart. d. Calculate the HCl, mercury, and/or TSM emission rate from the boiler or process heater in units of lb/MMBtu using Equation 15 and Equations 16, 17, and/or 18 in § 63.7530.
* * * * * * *	

■ 23. Table 11 to subpart DDDDD of part 63 is revised to read as follows:

TABLE 11 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER JUNE 4, 2010, AND BEFORE MAY 20, 2011

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
2. Units in all subcategories designed to burn solid fuel that combust at least 10 percent biomass/bio-based solids on an annual heat input basis and less than 10 percent coal/solid fossil fuels on an annual heat input basis.	a. Mercury	8.0E–07 [a] lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.

TABLE 11 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER JUNE 4, 2010, AND BEFORE MAY 20, 2011—Continued

If your boiler or process heater is in this subcategory . . .	For the following pollutants	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
3. Units in all subcategories designed to burn solid fuel that combust at least 10 percent coal/solid fossil fuels on an annual heat input basis and less than 10 percent biomass/bio-based solids on an annual heat input basis.	a. Mercury	2.0E–06 lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
4. Units design to burn coal/solid fossil fuel.	a. Filterable PM (or TSM)	1.1E–03 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
5. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. Carbon monoxide (CO) (or CEMS).	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
6. Stokers designed to burn coal/solid fossil fuel.	a. CO (or CEMS).	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen ,[c] 10-day rolling average).	1 hr minimum sampling time.
7. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
8. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
9. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (2.6E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
10. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	560 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (4.0E–03 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run
11. Fluidized bed units designed to burn biomass/bio-based solids.	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	9.8E–03 lb per MMBtu of heat input; or (8.3E–05 [a] lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run
12. Suspension burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (6.5E–03 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
13. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	1,010 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	8.0E–03 lb per MMBtu of heat input; or (3.9E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
14. Fuel cell units designed to burn biomass/bio-based solids.	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E–02 lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
15. Hybrid suspension grate boiler designed to burn biomass/bio-based solids.	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E–02 lb per MMBtu of heat input; or (4.4E–04 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run
16. Units designed to burn liquid fuel.	a. HCl	4.4E–04 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run
	b. Mercury.	4.8E–07 [a] lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
17. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average.	1 hr minimum sampling time.

TABLE 11 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER JUNE 4, 2010, AND BEFORE MAY 20, 2011—Continued

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	b. Filterable PM (or TSM)	1.3E–02 lb per MMBtu of heat input; or (7.5E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
18. Units designed to burn light liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E–03 [a] lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run
19. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E–02 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	Collect a minimum of 4 dscm per run
20. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. HCl	1.7E–03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E–03 lb per MMBtu of heat input; or (2.1E–04 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[c] An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

■ 24. Table 12 to subpart DDDDD of part 63 is revised to read as follows:

TABLE 12 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER MAY 20, 2011, AND BEFORE DECEMBER 23, 2011

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of start-up and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	3.5E–06 [a] lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.
2. Units design to burn coal/solid fossil fuel.	a. Filterable PM (or TSM)	1.1E–03 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. Carbon monoxide (CO) (or CEMS).	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
4. Stokers designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.

TABLE 12 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER MAY 20, 2011, AND BEFORE DECEMBER 23, 2011—Continued

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of start-up and shutdown . . .	Using this specified sampling volume or test run duration . . .
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (2.6E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (4.0E–03 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solids.	a. CO (or CEMS)	260 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	9.8E–03 lb per MMBtu of heat input; or (8.3E–05 [a] lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (6.5E–03 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E–03 lb per MMBtu of heat input; or (3.9E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solids.	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E–02 lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to burn biomass/bio-based solids.	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E–02 lb per MMBtu of heat input; or (4.4E–04 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel.	a. HCl	4.4E–04 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.8E–07 [a] lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E–02 lb per MMBtu of heat input; or (7.5E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
16. Units designed to burn light liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E–03 [a] lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E–02 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	Collect a minimum of 4 dscm per run.
18. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. HCl	1.7E–03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E–03 lb per MMBtu of heat input; or (2.1E–04 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[c] An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

■ 25. Table 13 to subpart DDDDD is of part 63 is revised to read as follows:

TABLE 13 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER DECEMBER 23, 2011, AND BEFORE APRIL 1, 2013

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of start-up and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	0.022 lb per MMBtu of heat input	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.
	b. Mercury	8.6E–07 [a] lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
2. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. Carbon monoxide (CO) (or CEMS).	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E–03 lb per MMBtu of heat input; or (2.8E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
3. Stokers designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.8E–02 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
4. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E–03 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
5. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E–03 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
6. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (410 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.0E–02 lb per MMBtu of heat input; or (2.6E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
7. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.2E–01 lb per MMBtu of heat input; or (4.0E–03 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
8. Fluidized bed units designed to burn biomass/bio-based solids.	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	9.8E–03 lb per MMBtu of heat input; or (8.3E–05 [a] lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
9. Suspension burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	5.1E–02 lb per MMBtu of heat input; or (6.5E–03 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
10. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	810 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	3.6E–02 lb per MMBtu of heat input; or (3.9E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
11. Fuel cell units designed to burn biomass/bio-based solids.	a. CO	910 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.0E–02 lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.

TABLE 13 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS THAT COMMENCED CONSTRUCTION OR RECONSTRUCTION AFTER DECEMBER 23, 2011, AND BEFORE APRIL 1, 2013—Continued

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during periods of start-up and shutdown . . .	Using this specified sampling volume or test run duration . . .
12. Hybrid suspension grate boiler designed to burn biomass/bio-based solids.	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 30-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.6E–02 lb per MMBtu of heat input; or (4.4E–04 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
13. Units designed to burn liquid fuel.	a. HCl	1.2E–03 lb per MMBtu of heat input	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.9E–07 [a] lb per MMBtu of heat input	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 4 dscm.
14. Units designed to burn heavy liquid fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average; or (18 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 10-day rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.3E–03 lb per MMBtu of heat input; or (7.5E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
15. Units designed to burn light liquid fuel.	a. CO (or CEMS)	130 [a] ppm by volume on a dry basis corrected to 3 percent oxygen; or (60 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 1-day block average)..	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	1.1E–03 [a] lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.
16. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen, 3-run average based on stack test; or (91 ppm by volume on a dry basis corrected to 3 percent oxygen,[c] 3-hour rolling average).	1 hr minimum sampling time.
	b. Filterable PM (or TSM)	2.3E–02 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	Collect a minimum of 2 dscm per run.
17. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen.	1 hr minimum sampling time.
	b. HCl	1.7E–03 lb per MMBtu of heat input	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b]collect a minimum of 3 dscm.
	d. Filterable PM (or TSM)	6.7E–03 lb per MMBtu of heat input; or (2.1E–04 lb per MMBtu of heat input).	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit and you are not required to conduct testing for CEMS or CPMS monitor certification, you can skip testing according to § 63.7515 if all of the other provision of § 63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see § 63.14.

[c] An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in § 63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to § 63.7505(d).

■ 26. Add Table 14 to subpart DDDDD of part 63 to read as follows:

TABLE 14 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]

[As stated in § 63.7500, you may continue to comply with the following applicable emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel..	a. HCl	2.2E–02 lb per MMBtu of heat input	2.5E–02 lb per MMBtu of steam output or 0.28 lb per MWh.	For M26A, collect a minimum of 1 dscm per run; for M26 collect a minimum of 120 liters per run.

TABLE 14 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]—Continued

[As stated in §63.7500, you may continue to comply with the following applicable emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	b. Mercury	8.0E–07 [a] lb per MMBtu of heat input.	8.7E–07 [a] lb per MMBtu of steam output or 1.1E–05 [a] lb per MWh.	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
2. Units designed to burn coal/solid fossil fuel.	a. Filterable PM (or TSM).	1.1E–03 lb per MMBtu of heat input; or (2.3E–05 lb per MMBtu of heat input).	1.1E–03 lb per MMBtu of steam output or 1.4E–02 lb per MWh; or (2.7E–05 lb per MMBtu of steam output or 2.9E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. Carbon monoxide (CO) (or CEMS).	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
4. Stokers/others designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3- percent oxygen, [d] 30-day rolling average).	1.2E–01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average.	1 hr minimum sampling time.
7. Stokers/sloped grate/others designed to burn wet biomass fuel.	a. CO (or CEMS)	620 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (390 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	5.8E–01 lb per MMBtu of steam output or 6.8 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.0E–02 lb per MMBtu of heat input; or (2.6E–05 lb per MMBtu of heat input).	3.5E–02 lb per MMBtu of steam output or 4.2E–01 lb per MWh; or (2.7E–05 lb per MMBtu of steam output or 3.7E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen.	4.2E–01 lb per MMBtu of steam output or 5.1 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.0E–02 lb per MMBtu of heat input; or (4.0E–03 lb per MMBtu of heat input).	3.5E–02 lb per MMBtu of steam output or 4.2E–01 lb per MWh; or (4.2E–03 lb per MMBtu of steam output or 5.6E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solids.	a. CO (or CEMS)	230 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 30-day rolling average).	2.2E–01 lb per MMBtu of steam output or 2.6 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	9.8E–03 lb per MMBtu of heat input; or (8.3E–05 [a] lb per MMBtu of heat input).	1.2E–02 lb per MMBtu of steam output or 0.14 lb per MWh; or (1.1E–04 [a] lb per MMBtu of steam output or 1.2E–03 [a] lb per MWh).	Collect a minimum of 3 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent oxygen, [d] 10-day rolling average).	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.0E–02 lb per MMBtu of heat input; or (6.5E–03 lb per MMBtu of heat input).	3.1E–02 lb per MMBtu of steam output or 4.2E–01 lb per MWh; or (6.6E–03 lb per MMBtu of steam output or 9.1E–02 lb per MWh).	Collect a minimum of 2 dscm per run.

TABLE 14 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]—Continued

[As stated in §63.7500, you may continue to comply with the following applicable emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solids.	a. CO (or CEMS)	330 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 10-day rolling average).	3.5E–01 lb per MMBtu of steam output or 3.6 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.2E–03 lb per MMBtu of heat input; or (3.9E–05 lb per MMBtu of heat input).	4.3E–03 lb per MMBtu of steam output or 4.5E–02 lb per MWh; or (5.2E–05 lb per MMBtu of steam output or 5.5E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solids.	a. CO	910 ppm by volume on a dry basis corrected to 3-percent oxygen.	1.1 lb per MMBtu of steam output or 1.0E+01 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.0E–02 lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	3.0E–02 lb per MMBtu of steam output or 2.8E–01 lb per MWh; or (5.1E–05 lb per MMBtu of steam output or 4.1E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate boiler designed to burn biomass/bio-based solids.	a. CO (or CEMS)	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3-percent oxygen,[d] 30-day rolling average).	1.4 lb per MMBtu of steam output or 12 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.6E–02 lb per MMBtu of heat input; or (4.4E–04 lb per MMBtu of heat input).	3.3E–02 lb per MMBtu of steam output or 3.7E–01 lb per MWh; or (5.5E–04 lb per MMBtu of steam output or 6.2E–03 lb per MWh).	Collect a minimum of 3 dscm per run.
14. Units designed to burn liquid fuel.	a. HCl	4.4E–04 lb per MMBtu of heat input	4.8E–04 lb per MMBtu of steam output or 6.1E–03 lb per MWh.	For M26A: Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	4.8E–07 [a] lb per MMBtu of heat input.	5.3E–07 [a] lb per MMBtu of steam output or 6.7E–06 [a] lb per MWh.	For M29, collect a minimum of 4 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 4 dscm.
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.3E–02 lb per MMBtu of heat input; or (7.5E–05 [a] lb per MMBtu of heat input).	1.5E–02 lb per MMBtu of steam output or 1.8E–01 lb per MWh; or (8.2E–05 [a] lb per MMBtu of steam output or 1.1E–03 [a] lb per MWh).	Collect a minimum of 3 dscm per run.
16. Units designed to burn light liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.1E–03 [a] lb per MMBtu of heat input; or (2.9E–05 lb per MMBtu of heat input).	1.2E–03 [a] lb per MMBtu of steam output or 1.6E–02 [a] lb per MWh; or (3.2E–05 lb per MMBtu of steam output or 4.0E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average based on stack test.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.3E–02 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	2.5E–02 lb per MMBtu of steam output or 3.2E–01 lb per MWh; or (9.4E–04 lb per MMBtu of steam output or 1.2E–02 lb per MWh).	Collect a minimum of 4 dscm per run.
18. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.16 lb per MMBtu of steam output or 1.0 lb per MWh.	1 hr minimum sampling time.
	b. HCl	1.7E–03 lb per MMBtu of heat input	2.9E–03 lb per MMBtu of steam output or 1.8E–02 lb per MWh.	For M26A, Collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	1.4E–05 lb per MMBtu of steam output or 8.3E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.

TABLE 14 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR NEW OR RECONSTRUCTED BOILERS AND PROCESS HEATERS [c]—Continued

[As stated in §63.7500, you may continue to comply with the following applicable emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	Or the emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
	d. Filterable PM (or TSM).	6.7E–03 lb per MMBtu of heat input; or (2.1E–04 lb per MMBtu of heat input).	1.2E–02 lb per MMBtu of steam output or 7.0E–02 lb per MWh; or (3.5E–04 lb per MMBtu of steam output or 2.2E–03 lb per MWh).	Collect a minimum of 3 dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to §63.7515 if all of the other provisions of §63.7515 are met. For all other pollutants that do not contain a footnote "a", your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see §63.14.

[c] If your affected source is a new or reconstructed affected source that commenced construction or reconstruction after June 4, 2010, and before April 1, 2013, you may comply with the emission limits in Table 11, 12, or 13 to this subpart until January 31, 2016. On and after January 31, 2016, but before October 6, 2025 you may comply with the emission limits in this Table 14. On and after October 6, 2025, you must comply with the emission limits in Table 1 to this subpart.

[d] An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in §63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to §63.7505(d).

■ 27. Add Table 15 to subpart DDDDD of part 63 to read as follows:

TABLE 15 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS [D]

[As stated in §63.7500, you may continue to comply with following emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
1. Units in all subcategories designed to burn solid fuel.	a. HCl	2.2E–02 lb per MMBtu of heat input	2.5E–02 lb per MMBtu of steam output or 0.27 lb per MWh.	For M26A, Collect a minimum of 1 dscm per run; for M26, collect a minimum of 120 liters per run.
	b. Mercury	5.7E–06 lb per MMBtu of heat input	6.4E–06 lb per MMBtu of steam output or 7.3E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 3 dscm.
2. Units design to burn coal/solid fossil fuel.	a. Filterable PM (or TSM).	4.0E–02 lb per MMBtu of heat input; or (5.3E–05 lb per MMBtu of heat input).	4.2E–02 lb per MMBtu of steam output or 4.9E–01 lb per MWh; or (5.6E–05 lb per MMBtu of steam output or 6.5E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
3. Pulverized coal boilers designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (320 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	0.11 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
4. Stokers/others designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	160 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (340 ppm by volume on a dry basis corrected to 3- percent oxygen,[c] 30-day rolling average).	0.14 lb per MMBtu of steam output or 1.7 lb per MWh; 3-run average.	1 hr minimum sampling time.
5. Fluidized bed units designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (230 ppm by volume on a dry basis corrected to 3- percent oxygen,[c] 30-day rolling average).	0.12 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
6. Fluidized bed units with an integrated heat exchanger designed to burn coal/solid fossil fuel.	a. CO (or CEMS)	140 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (150 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	1.3E–01 lb per MMBtu of steam output or 1.5 lb per MWh; 3-run average.	1 hr minimum sampling time.

TABLE 15 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS [D]—Continued

[As stated in §63.7500, you may continue to comply with following emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
7. Stokers/sloped grate/ others designed to burn wet biomass fuel.	a. CO (or CEMS)	1,500 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (720 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 30-day rolling average).	1.4 lb per MMBtu of steam output or 17 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.7E–02 lb per MMBtu of heat input; or (2.4E–04 lb per MMBtu of heat input).	4.3E–02 lb per MMBtu of steam output or 5.2E–01 lb per MWh; or (2.8E–04 lb per MMBtu of steam output or 3.4E–04 lb per MWh).	Collect a minimum of 2 dscm per run.
8. Stokers/sloped grate/ others designed to burn kiln-dried biomass fuel.	a. CO	460 ppm by volume on a dry basis corrected to 3-percent oxygen.	4.2E–01 lb per MMBtu of steam output or 5.1 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	3.2E–01 lb per MMBtu of heat input; or (4.0E–03 lb per MMBtu of heat input).	3.7E–01 lb per MMBtu of steam output or 4.5 lb per MWh; or (4.6E–03 lb per MMBtu of steam output or 5.6E–02 lb per MWh).	Collect a minimum of 1 dscm per run.
9. Fluidized bed units designed to burn biomass/bio-based solid.	a. CO (or CEMS)	470 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (310 ppm by volume on a dry basis corrected to 3- percent oxygen,[c] 30-day rolling average).	4.6E–01 lb per MMBtu of steam output or 5.2 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	1.1E–01 lb per MMBtu of heat input; or (1.2E–03 lb per MMBtu of heat input).	1.4E–01 lb per MMBtu of steam output or 1.6 lb per MWh; or (1.5E–03 lb per MMBtu of steam output or 1.7E–02 lb per MWh).	Collect a minimum of 1 dscm per run.
10. Suspension burners designed to burn biomass/bio-based solid.	a. CO (or CEMS)	2,400 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (2,000 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 10-day rolling average).	1.9 lb per MMBtu of steam output or 27 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	5.1E–02 lb per MMBtu of heat input; or (6.5E–03 lb per MMBtu of heat input).	5.2E–02 lb per MMBtu of steam output or 7.1E–01 lb per MWh; or (6.6E–03 lb per MMBtu of steam output or 9.1E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
11. Dutch Ovens/Pile burners designed to burn biomass/bio-based solid.	a. CO (or CEMS)	770 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (520 ppm by volume on a dry basis corrected to 3-percent oxygen,[c] 10-day rolling average).	8.4E–01 lb per MMBtu of steam output or 8.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.8E–01 lb per MMBtu of heat input; or (2.0E–03 lb per MMBtu of heat input).	3.9E–01 lb per MMBtu of steam output or 3.9 lb per MWh; or (2.8E–03 lb per MMBtu of steam output or 2.8E–02 lb per MWh).	Collect a minimum of 1 dscm per run.
12. Fuel cell units designed to burn biomass/bio-based solid.	a. CO	1,100 ppm by volume on a dry basis corrected to 3-percent oxygen.	2.4 lb per MMBtu of steam output or 12 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.0E–02 lb per MMBtu of heat input; or (5.8E–03 lb per MMBtu of heat input).	5.5E–02 lb per MMBtu of steam output or 2.8E–01 lb per MWh; or (1.6E–02 lb per MMBtu of steam output or 8.1E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
13. Hybrid suspension grate units designed to burn biomass/bio-based solid.	a. CO (or CEMS)	3,500 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average; or (900 ppm by volume on a dry basis corrected to 3- percent oxygen,[c] 30-day rolling average).	3.5 lb per MMBtu of steam output or 39 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	4.4E–01 lb per MMBtu of heat input; or (4.5E–04 lb per MMBtu of heat input).	5.5E–01 lb per MMBtu of steam output or 6.2 lb per MWh; or (5.7E–04 lb per MMBtu of steam output or 6.3E–03 lb per MWh).	Collect a minimum of 1 dscm per run.
14. Units designed to burn liquid fuel.	a. HCl	1.1E–03 lb per MMBtu of heat input	1.4E–03 lb per MMBtu of steam output or 1.6E–02 lb per MWh.	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	b. Mercury	2.0E–06 lb per MMBtu of heat input	2.5E–06 lb per MMBtu of steam output or 2.8E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B collect a minimum sample as specified in the method, for ASTM D6784 [b] collect a minimum of 2 dscm.

TABLE 15 TO SUBPART DDDDD OF PART 63—ALTERNATIVE EMISSION LIMITS FOR EXISTING BOILERS AND PROCESS HEATERS [D]—Continued

[As stated in §63.7500, you may continue to comply with following emission limits until October 6, 2025: [Units with heat input capacity of 10 million Btu per hour or greater]]

If your boiler or process heater is in this subcategory . . .	For the following pollutants . . .	The emissions must not exceed the following emission limits, except during startup and shutdown . . .	The emissions must not exceed the following alternative output-based limits, except during startup and shutdown . . .	Using this specified sampling volume or test run duration . . .
15. Units designed to burn heavy liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	6.2E–02 lb per MMBtu of heat input; or (2.0E–04 lb per MMBtu of heat input).	7.5E–02 lb per MMBtu of steam output or 8.6E–01 lb per MWh; or (2.5E–04 lb per MMBtu of steam output or 2.8E–03 lb per MWh).	Collect a minimum of 1 dscm per run.
16. Units designed to burn light liquid fuel.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	7.9E–03 lb per MMBtu of heat input; or (6.2E–05 lb per MMBtu of heat input).	9.6E–03 lb per MMBtu of steam output or 1.1E–01 lb per MWh; or (7.5E–05 lb per MMBtu of steam output or 8.6E–04 lb per MWh).	Collect a minimum of 3 dscm per run.
17. Units designed to burn liquid fuel that are non-continental units.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen, 3-run average based on stack test.	0.13 lb per MMBtu of steam output or 1.4 lb per MWh; 3-run average.	1 hr minimum sampling time.
	b. Filterable PM (or TSM).	2.7E–01 lb per MMBtu of heat input; or (8.6E–04 lb per MMBtu of heat input).	3.3E–01 lb per MMBtu of steam output or 3.8 lb per MWh; or (1.1E–03 lb per MMBtu of steam output or 1.2E–02 lb per MWh).	Collect a minimum of 2 dscm per run.
18. Units designed to burn gas 2 (other) gases.	a. CO	130 ppm by volume on a dry basis corrected to 3-percent oxygen.	0.16 lb per MMBtu of steam output or 1.0 lb per MWh.	1 hr minimum sampling time.
	b. HCl	1.7E–03 lb per MMBtu of heat input	2.9E–03 lb per MMBtu of steam output or 1.8E–02 lb per MWh.	For M26A, collect a minimum of 2 dscm per run; for M26, collect a minimum of 240 liters per run.
	c. Mercury	7.9E–06 lb per MMBtu of heat input	1.4E–05 lb per MMBtu of steam output or 8.3E–05 lb per MWh.	For M29, collect a minimum of 3 dscm per run; for M30A or M30B, collect a minimum sample as specified in the method; for ASTM D6784 [b] collect a minimum of 2 dscm.
	d. Filterable PM (or TSM).	6.7E–03 lb per MMBtu of heat input or (2.1E–04 lb per MMBtu of heat input).	1.2E–02 lb per MMBtu of steam output or 7.0E–02 lb per MWh; or (3.5E–04 lb per MMBtu of steam output or 2.2E–03 lb per MWh).	Collect a minimum of three dscm per run.

[a] If you are conducting stack tests to demonstrate compliance and your performance tests for this pollutant for at least 2 consecutive years show that your emissions are at or below this limit, you can skip testing according to §63.7515 if all of the other provisions of §63.7515 are met. For all other pollutants that do not contain a footnote a, your performance tests for this pollutant for at least 2 consecutive years must show that your emissions are at or below 75 percent of this limit in order to qualify for skip testing.

[b] Incorporated by reference, see §63.14.

[c] An owner or operator may determine compliance with the carbon monoxide emissions limit using carbon dioxide as a diluent correction in place of oxygen as described in §63.7525(a)(1). EPA Method 19 F-factors in 40 CFR part 60, appendix A–7, and EPA Method 19 equations in 40 CFR part 60, appendix A–7, must be used to generate the appropriate CO_2 correction percentage for the fuel type burned in the unit, and must also take into account that the 3% oxygen correction is to be done on a dry basis. The methodology must account for any CO_2 being added to, or removed from, the emissions gas stream as a result of limestone injection, scrubber media, etc. This methodology must be detailed in the site-specific monitoring plan developed according to §63.7505(d).

[d] Before October 6, 2025 you may comply with the emission limits in this Table 15. On and after October 6, 2025, you must comply with the emission limits in Table 2 to this subpart.

[FR Doc. 2022–19612 Filed 10–5–22; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 60 and 63

[EPA–HQ–OAR–2021–0619; FRL–8602–02–OAR]

RIN 2060–AV43

New Source Performance Standards Review for Lead Acid Battery Manufacturing Plants and National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes the results of the Environmental Protection Agency's (EPA's) review of the New Source Performance Standards (NSPS) for Lead Acid Battery Manufacturing Plants and the technology review for the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Lead Acid Battery Manufacturing Area Sources as required under the Clean Air Act (CAA). The EPA is finalizing revised lead emission limits for grid casting, paste mixing, and lead reclamation operations for both the area source NESHAP and under a new NSPS subpart (for lead acid battery manufacturing facilities that begin construction, reconstruction, or modification after February 23, 2022). In addition, the EPA is finalizing the following amendments for both the area source NESHAP and under the new NSPS subpart: performance testing once every 5 years to demonstrate compliance; work practices to minimize emissions of fugitive lead dust; increased inspection frequency of fabric filters; clarification of activities that are considered to be lead reclamation activities; electronic reporting of performance test results and semiannual compliance reports; and the removal of exemptions for periods of startup, shutdown, and malfunctions (SSM). The EPA is also finalizing a revision to the applicability provisions in the area source NESHAP such that facilities which make lead-bearing battery parts or process input material, including but not limited to grid casting facilities and lead oxide manufacturing facilities, will be subject to the area source NESHAP. In addition, the EPA is finalizing a requirement in the new NSPS for new facilities to operate bag leak detection systems for emission points controlled by a fabric filter that do not include a secondary fabric filter.

DATES: This final rule is effective on February 23, 2023. The incorporation by reference (IBR) of certain publications listed in the rule is approved by the Director of the Federal Register as of February 23, 2023.

ADDRESSES: The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA–HQ–OAR–2021–0619. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *https://www.regulations.gov/,* or in hard copy at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For questions about this action, contact Amanda Hansen, Sector Policies and Programs Division (D243–02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–3165; and email address: *hansen.amanda@epa.gov.*

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. Throughout this preamble the use of "we," "us," or "our" is intended to refer to the EPA. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

ANSI American National Standards Institute
BCI Battery Council International
BSER best system of emissions reduction
CAA Clean Air Act
DCOT digital camera opacity technique
EJ Environmental Justice
EPA Environmental Protection Agency
ERT Electronic Reporting Tool
FR Federal Register
GACT generally available control technology
HAP hazardous air pollutant(s)
HEPA high efficiency particulate air
µm microns
mg/dscm milligrams per dry standard cubic meters
NAAQS National Ambient Air Quality Standards
NAICS North American Industry Classification System
NEI National Emissions Inventory
NESHAP national emission standards for hazardous air pollutants
NSPS new source performance standards
NTTAA National Technology Transfer and Advancement Act
OMB Office of Management and Budget
Pb lead
RACT reasonably available control technology
SIC Standard Industrial Classification
SSM startup, shutdown, and malfunction
the court the United States Court of Appeals for the District of Columbia Circuit
tpd tons per day
tpy tons per year
TR technology review
TRI Toxics Release Inventory
µg/m^3 microgram per cubic meter
UPL upper prediction limit
VCS voluntary consensus standards

Background information. On February 23, 2022 (87 FR 10134), the EPA proposed revisions to the Lead Acid Battery Manufacturing Area Source NESHAP based on our technology review (TR) and proposed a new NSPS subpart based on the best systems of emission reduction (BSER) review. In this action, we are finalizing decisions and revisions for the rules. We summarize some of the more significant comments we timely received regarding the proposed rules and provide our responses in this preamble. A summary of all other public comments on the proposal and the EPA's responses to those comments is available in the *New Source Performance Standards for Lead Acid Battery Manufacturing Plants and National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources Summary of Public Comments and Responses on Proposed Rules* (hereafter referred to as the "Comment Summary and Response Document") in the docket for this action, Docket ID No. EPA–HQ–OAR–2021–0619. A "track changes" version of the regulatory language that incorporates the changes in this action is also available in the docket.

Organization of this document. The information in this preamble is organized as follows:

I. General Information
A. Does this action apply to me?
B. Where can I get a copy of this document and other related information?
C. Judicial Review and Administrative Reconsideration
II. Background

A. What is the statutory authority for this final action?
1. NSPS
2. NESHAP
B. How does the EPA perform the NSPS and NESHAP reviews?
1. NSPS
2. NESHAP
C. What is the source category regulated in this final action?
D. What changes did we propose for the lead acid battery manufacturing source category in our February 23, 2022, proposal?
E. What outreach and engagement did the EPA conduct with environmental justice communities?
III. What actions are we finalizing and what is our rationale for such decisions?
A. NSPS
B. NESHAP
C. What are the effective and compliance dates of the standards?
1. NSPS
2. NESHAP
IV. Summary of Cost, Environmental, and Economic Impacts
A. What are the affected facilities?
1. NSPS
2. NESHAP
B. What are the air quality impacts?
1. NSPS
2. NESHAP
C. What are the cost impacts?
1. NSPS
2. NESHAP
D. What are the economic impacts?
E. What are the benefits?
1. NSPS
2. NESHAP
F. What analysis of environmental justice did we conduct?
1. NSPS
2. NESHAP
V. Statutory and Executive Order Reviews
A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
B. Paperwork Reduction Act (PRA)
C. Regulatory Flexibility Act (RFA)
D. Unfunded Mandates Reform Act (UMRA)
E. Executive Order 13132: Federalism
F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51
J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
K. Congressional Review Act (CRA)

I. General Information

A. Does this action apply to me?

The source category that is the subject of this final action is lead acid battery manufacturing regulated under CAA section 111 New Source Performance Standards (NSPS) and under CAA section 112 National Emission Standards for Hazardous Air Pollutants (NESHAP). The North American Industry Classification System (NAICS) code for the lead acid battery manufacturing industry is 335911. The NAICS code serves as a guide for readers outlining the type of entities that this final action is likely to affect. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576; July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (see EPA–450/3–91–030, July 1992), the Lead Acid Battery Manufacturing source category for purposes of CAA section 112 includes any facility engaged in producing lead acid or lead acid storage batteries, including, but not limited to, starting-lighting-ignition batteries and industrial storage batteries. The category includes, but is not limited to, the following lead acid battery manufacturing steps: lead oxide production, grid casting, paste mixing, and three-process operation (plate stacking, burning, and assembly). Lead acid battery manufacturing was identified as a source category under CAA section 111 in the *Priorities for New Source Performance Standards Under the Clean Air Act Amendments of 1977* (see EPA–450/3–78–019, April 1978), and added to the priority list in the *Revised Prioritized List of Source Categories for NSPS Promulgation* (see EPA–450/3–79–023, March 1979). Federal, state, local and tribal government entities would not be affected by this action. If you have any questions regarding the applicability of this action to a particular entity, you should carefully examine the applicability criteria found in 40 CFR part 60, subpart KKa, and 40 CFR part 63, subpart PPPPPP, or consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section of this preamble, your state air pollution control agency with delegated authority for NSPS and NESHAP, or your EPA Regional Office.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this final action will also be available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at: *https://www.epa.gov/stationary-sources-air-pollution/lead-acid-battery-manufacturing-new-source-performance-standards* and *https://www.epa.gov/stationary-sources-air-pollution/lead-acid-battery-manufacturing-area-sources-national-emission*. Following publication in the **Federal Register** (FR), the EPA will post the **Federal Register** version and key technical documents at this same website.

C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the court) by April 24, 2023. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that ''[o]nly an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.'' This section also provides a mechanism for the EPA to convene a proceeding for reconsideration, ''[i]f the person raising an objection can demonstrate to the EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment, (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.'' Any person seeking to make such a demonstration to us should submit a Petition for Reconsideration to the Office of the Administrator, U.S. Environmental Protection Agency, Room 3000, WJC West Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

A. What is the statutory authority for this final action?

1. NSPS

The EPA's authority for this final NSPS rule is CAA section 111, which governs the establishment of standards of performance for stationary sources. Section 111(b)(1)(A) of the CAA requires the EPA Administrator to list categories of stationary sources that in the Administrator's judgment cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health or welfare. The EPA must then issue performance standards for new (and modified or reconstructed) sources in each source category pursuant to CAA section 111(b)(1)(B). These standards are referred to as new source performance standards, or NSPS. The EPA has the authority to define the scope of the source categories, determine the pollutants for which standards should be developed, set the emission level of the standards, and distinguish among classes, types, and sizes within categories in establishing the standards.

CAA section 111(b)(1)(B) requires the EPA to "at least every 8 years review and, if appropriate, revise" NSPS. However, the Administrator need not review any such standard if the "Administrator determines that such review is not appropriate in light of readily available information on the efficacy" of the standard. When conducting a review of an existing performance standard, the EPA has the discretion and authority to add emission limits for pollutants or emission sources not currently regulated for that source category.

In setting or revising a performance standard, CAA section 111(a)(1) provides that performance standards are to reflect "the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." The term "standard of performance" in CAA section 111(a)(1) makes clear that the EPA is to determine both the best system of emission reduction (BSER) for the regulated sources in the source category and the degree of emission limitation achievable through application of the BSER. The EPA must then, under CAA section 111(b)(1)(B), promulgate standards of performance for new sources that reflect that level of stringency. CAA section 111(h)(1) authorizes the Administrator to promulgate "a design, equipment, work practice, or operational standard, or combination thereof" if in his or her judgment, "it is not feasible to prescribe or enforce a standard of performance." CAA section 111(h)(2) provides the circumstances under which prescribing or enforcing a standard of performance is "not feasible," such as, when the pollutant cannot be emitted through a conveyance designed to emit or capture the pollutant, or when there is no practicable measurement methodology for the particular class of sources.

CAA section 111(b)(5) precludes the EPA from prescribing a particular technological system that must be used to comply with a standard of performance. Rather, sources can select any measure or combination of measures that will achieve the standard.

Pursuant to the definition of new source in CAA section 111(a)(2), standards of performance apply to facilities that begin construction, reconstruction, or modification after the date of publication of the proposed standards in the **Federal Register**. Under CAA section 111(a)(4), "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted. Changes to an existing facility that do not result in an increase in emissions are not considered modifications. Under the provisions in 40 CFR 60.15, reconstruction means the replacement of components of an existing facility such that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and (2) it is technologically and economically feasible to meet the applicable standards. Pursuant to CAA section 111(b)(1)(B), the standards of performance or revisions thereof shall become effective upon promulgation.

2. NESHAP

The statutory authority for this NESHAP action is provided by sections 112 and 301 of the CAA, as amended (42 U.S.C. 7401 *et seq.*). Section 112(d)(6) requires the EPA to review standards promulgated under CAA section 112(d) and revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less often than every 8 years following promulgation of those standards. This is referred to as a "technology review" and is required for all standards established under CAA section 112(d) including generally available control technology (GACT) standards that apply to area sources.[1] This action finalizes the 112(d)(6) technology review for the Lead Acid Battery Manufacturing Area Source NESHAP.

Several additional CAA sections are relevant to this action as they specifically address regulation of hazardous air pollutant emissions from area sources. Collectively, CAA sections 112(c)(3), (d)(5), and (k)(3) are the basis of the Area Source Program under the Urban Air Toxics Strategy, which provides the framework for regulation of area sources under CAA section 112.

Section 112(k)(3)(B) of the CAA requires the EPA to identify at least 30 HAP that pose the greatest potential health threat in urban areas with a primary goal of achieving a 75 percent reduction in cancer incidence attributable to HAP emitted from stationary sources. As discussed in the Integrated Urban Air Toxics Strategy (64 FR 38706, 38715; July 19, 1999), the EPA identified 30 HAP emitted from area sources that pose the greatest potential health threat in urban areas, and these HAP are commonly referred to as the "30 urban HAP."

Section 112(c)(3), in turn, requires the EPA to list sufficient categories or subcategories of area sources to ensure that area sources representing 90 percent of the emissions of the 30 urban HAP are subject to regulation. The EPA implemented these requirements through the Integrated Urban Air Toxics Strategy by identifying and setting standards for categories of area sources including the lead acid battery manufacturing source category that is addressed in this action.

CAA section 112(d)(5) provides that for area source categories, in lieu of setting maximum achievable control technology (MACT) standards (which are generally required for major source categories), the EPA may elect to promulgate standards or requirements for area sources "which provide for the use of generally available control technology or management practices [GACT] by such sources to reduce emissions of hazardous air pollutants." In developing such standards, the EPA evaluates the control technologies and management practices that reduce HAP emissions that are generally available

[1] For categories of area sources subject to GACT standards, CAA sections 112(d)(5) and (f)(5) provide that the EPA is not required to conduct a residual risk review under CAA section 112(f)(2). However, the EPA is required to conduct periodic technology reviews under CAA section 112(d)(6).

for each area source category. Consistent with the legislative history, we can consider costs and economic impacts in determining what constitutes GACT.

GACT standards were set for the lead acid battery manufacturing source category on July 16, 2007 (72 FR 38864). As noted above, this action finalizes the required CAA 112(d)(6) technology review for that source category.

B. How does the EPA perform the NSPS and NESHAP reviews?

1. NSPS

As noted in section II.A, CAA section 111 requires the EPA, at least every 8 years to review and, if appropriate revise the standards of performance applicable to new, modified, and reconstructed sources. If the EPA revises the standards of performance, they must reflect the degree of emission limitation achievable through the application of the BSER taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements (see CAA section 111(a)(1)).

In reviewing an NSPS to determine whether it is ''appropriate'' to revise the standards of performance, the EPA evaluates the statutory factors, which may include consideration of the following information:

- Expected growth for the source category, including how many new facilities, reconstructions, and modifications may trigger NSPS in the future.
- Pollution control measures, including advances in control technologies, process operations, design or efficiency improvements, or other systems of emission reduction, that are ''adequately demonstrated'' in the regulated industry.
- Available information from the implementation and enforcement of current requirements indicates that emission limitations and percent reductions beyond those required by the current standards are achieved in practice.
- Costs (including capital and annual costs) associated with implementation of the available pollution control measures.
- The amount of emission reductions achievable through application of such pollution control measures.
- Any nonair quality health and environmental impact and energy requirements associated with those control measures.

In evaluating whether the cost of a particular system of emission reduction is reasonable, the EPA considers various costs associated with the air pollution control measure or level of control, including capital costs and operating costs, and the emission reductions that the control measure or level of control can achieve. The Agency considers these costs in the context of the industry's overall capital expenditures and revenues. The Agency also considers cost effectiveness analysis as a useful metric, and a means of evaluating whether a given control achieves emission reduction at a reasonable cost. A cost effectiveness analysis allows comparisons of relative costs and outcomes (effects) of two or more options. In general, cost effectiveness is a measure of the outcomes produced by resources spent. In the context of air pollution control options, cost effectiveness typically refers to the annualized cost of implementing an air pollution control option divided by the amount of pollutant reductions realized annually.

After the EPA evaluates the statutory factors, the EPA compares the various systems of emission reductions and determines which system is ''best,'' and therefore represents the BSER. The EPA then establishes a standard of performance that reflects the degree of emission limitation achievable through the implementation of the BSER. In doing this analysis, the EPA can determine whether subcategorization is appropriate based on classes, types, and sizes of sources, and may identify a different BSER and establish different performance standards for each subcategory. The result of the analysis and BSER determination leads to standards of performance that apply to facilities that begin construction, reconstruction, or modification after the date of publication of the proposed standards in the **Federal Register**. Because the new source performance standards reflect the best system of emission reduction under conditions of proper operation and maintenance, in doing its review, the EPA also evaluates and determines the proper testing, monitoring, recordkeeping and reporting requirements needed to ensure compliance with the emission standards.

2. NESHAP

For the NESHAP area source GACT standards, we perform a technology review that primarily focuses on the identification and evaluation of developments in practices, processes, and control technologies that have occurred since the standards were promulgated. Where we identify such developments, we analyze their technical feasibility, estimated costs, energy implications, and non-air environmental impacts. We also consider the emission reductions associated with applying each development. This analysis informs our decision of whether it is ''necessary'' to revise the emissions standards. In addition, we consider the appropriateness of applying controls to new sources versus retrofitting existing sources. For this exercise, we consider any of the following to be a ''development'':

- Any add-on control technology or other equipment that was not identified and considered during development of the original GACT standards;
- Any improvements in add-on control technology or other equipment (that were identified and considered during development of the original GACT standards) that could result in additional emissions reduction;
- Any work practice or operational procedure that was not identified or considered during development of the original GACT standards;
- Any process change or pollution prevention alternative that could be broadly applied to the industry and that was not identified or considered during development of the original GACT standards; and
- Any significant changes in the cost (including cost effectiveness) of applying controls (including controls the EPA considered during the development of the original GACT standards).

In addition to reviewing the practices, processes, and control technologies that were considered at the time we originally developed the NESHAP, we review a variety of data sources in our investigation of potential practices, processes, or controls to consider.

C. What is the source category regulated in this final action?

The lead acid battery manufacturing source category consists of facilities engaged in producing lead acid batteries. The EPA first promulgated new source performance standards for lead acid battery manufacturing on April 16, 1982. These standards of performance are codified in 40 CFR part 60, subpart KK, and are applicable to sources that commence construction, modification, or reconstruction after January 14, 1980 (47 FR 16564). The EPA also set GACT standards for the lead acid battery manufacturing source category on July 16, 2007. These standards are codified in 40 CFR part 63, subpart PPPPPP, and are applicable to existing and new affected facilities.

Under 40 CFR 60, subpart KK, and 40 CFR 63, subpart PPPPPP, a lead acid battery manufacturing plant is defined

as any plant that produces a storage battery using lead and lead compounds for the plates and sulfuric acid for the electrolyte. The batteries manufactured at these facilities include starting, lighting, and ignition batteries primarily used in automobiles as well as industrial and traction batteries. Industrial batteries include those used for uninterruptible power supplies and other backup power applications, and traction batteries are used to power electric vehicles such as forklifts.

The lead acid battery manufacturing process begins with grid casting operations, which entails stamping or casting lead into grids. Next, in paste mixing operations, lead oxide powder is mixed with water and sulfuric acid to form a stiff paste, which is then pressed onto the lead grids, creating plates. Lead oxide may be produced by the battery manufacturer, as is the case for many larger battery manufacturing plants or may be purchased from a supplier. The plates are cured, stacked, and connected into groups that form the individual elements of a lead acid battery. This stacking, connecting, and assembly of the plates into battery cases is generally performed in one operation termed the ''three-process operation.'' At some facilities, lead reclamation may be performed, in which relatively clean lead scrap from these processes is collected and remelted into blocks, called ingots, for reuse in the process.

The NSPS applies to all lead acid battery manufacturing plants constructed, reconstructed, or modified since January 14, 1980, if they produce or have the design capacity to produce batteries containing 5.9 megagrams (6.5 tons) or more of lead in one day. The NSPS contains emission limits for lead and opacity limits for grid casting, paste mixing, three-process operations, lead oxide manufacturing, other lead emitting sources, and lead reclamation at lead acid battery manufacturing plants. The NESHAP applies to all lead acid battery manufacturing facilities that are area sources regardless of production capacity. The GACT standards include the same emissions and opacity limits as those in the NSPS as well as some additional monitoring requirements.

The EPA estimates that, of the 40 existing lead acid battery manufacturing facilities in the U.S., all are subject to the NSPS, and 39 facilities are subject to the NESHAP. One facility is a major source as defined under CAA section 112 and is therefore not subject to the area source GACT standards. In addition to these 40 facilities, we estimate that there are four facilities that perform one or more processes (*e.g.,* grid casting or lead oxide production) involved in the production of lead acid batteries but that do not manufacture the final product (*i.e.,* lead acid batteries). These four facilities have not previously been subject to either the NSPS or the area source NESHAP. The EPA does not expect any new lead acid battery manufacturing facilities nor any facilities that conduct a lead acid battery manufacturing process without producing the final lead acid battery product to be constructed in the foreseeable future. However, we do expect that some existing facilities of both types could undergo modifications or reconstruction.

D. What changes did we propose for the lead acid battery manufacturing source category in our February 23, 2022, proposal?

On February 23, 2022, the EPA published proposed rules in the **Federal Register** (87 FR 10134) for the NSPS for Lead Acid Battery Manufacturing Plants (40 CFR part 60, subpart KKa) and the NESHAP for Lead Acid Battery Manufacturing Area Sources (40 CFR part 63, subpart PPPPPP) that were based on the BSER review for the NSPS and the technology review for the NESHAP. The EPA proposed revised lead emission limits for grid casting, paste mixing, and lead reclamation operations for both the area source NESHAP (for new and existing sources) and under a new NSPS subpart (for lead acid battery manufacturing facilities that begin construction, reconstruction, or modification after February 23, 2022). In addition, the Agency proposed the following amendments for both the area source NESHAP (for new and existing sources) and under the new NSPS subpart: performance testing once every 5 years to demonstrate compliance; work practices to minimize emissions of fugitive lead dust; increased inspection frequency of fabric filters; bag leak detection systems for facilities above a certain size (*i.e.,* facilities with capacity to process greater than 150 tons per day (tpd) of lead); clarification of activities that are considered to be lead reclamation activities; electronic reporting of performance test results and semiannual compliance reports; and the removal of exemptions for periods of SSM. The EPA also proposed a revision to the applicability provisions in the area source NESHAP such that facilities which make lead-bearing battery parts or process input material, including but not limited to grid casting facilities and lead oxide manufacturing facilities, will be subject to the area source NESHAP. For additional information regarding the proposed rule, please see the February 23, 2022, proposal (87 FR 10134).

E. What outreach and engagement did the EPA conduct with environmental justice communities?

As part of this rulemaking and pursuant to multiple Executive Orders addressing environmental justice (EJ), the EPA engaged and consulted with the public, including populations of people of color and low-income populations, by sending out listserv notifications to EJ representatives regarding the publication of the proposed rule and providing the opportunity for members of the public to speak at a public hearing regarding the proposed rule amendments. While no one requested to speak at a public hearing, these opportunities gave the EPA a chance to hear directly from the public, especially communities potentially impacted by this final action. To identify pertinent stakeholders for engaging discussions of the rule, we used information available to the Agency, such as lists of EJ community representatives and activists, and information from the EJ analysis conducted for this rule and summarized in section IV.F. of this preamble.

Although most of the comments received following the proposal were technical in nature, some commenters remarked on issues regarding the rule's effectiveness in protecting health and welfare in EJ communities, such as the need to close rule loopholes and the need for the EPA to conduct health risk assessments. Responses to several of the technical related comments are summarized, and responded to, in this preamble. All other comments and the EPA's responses are provided in the Comment Summary and Response Document, available in the docket for this action, and section III of the preamble provides a description of how the Agency considered these comments in the context of regulatory development.

III. What actions are we finalizing and what is our rationale for such decisions?

The EPA proposed the current review of the lead acid battery manufacturing NSPS (40 CFR part 60, subpart KK) and NESHAP (40 CFR part 63, subpart PPPPPP) on February 23, 2022. We proposed to create a new NSPS subpart at 40 CFR part 60, subpart KKa, to include the proposed revisions to the NSPS for affected sources that are new, modified, or reconstructed following the date of the proposal, and we proposed revisions to the NESHAP within 40 CFR part 63, subpart PPPPPP. We received

eight comments from industry, environmental groups, and private individuals during the comment period. A summary of the more significant comments we timely received regarding the proposed rule and our responses are provided in this preamble. A summary of all other public comments on the proposal and the EPA's responses to those comments is available in the Comment Summary and Response Document in the docket for this action, (Docket ID No. EPA–HQ–OAR–2021–0619). In this action, the EPA is finalizing decisions and revisions pursuant to CAA section 111(b)(1)(B) and CAA section 112(d)(6) review for lead acid battery manufacturing after our considerations of all the comments received.

A. NSPS

As mentioned above, the EPA is finalizing revisions to the NSPS for lead acid battery manufacturing pursuant to the CAA section 111(b)(1)(B) review. The EPA is promulgating the NSPS revisions in a new subpart, 40 CFR part 60, subpart KKa. The new NSPS subpart is applicable to affected sources constructed, modified, or reconstructed after February 23, 2022.

This action finalizes standards of performance in 40 CFR part 60, subpart KKa, for paste mixing operations, grid casting, and lead reclamation, as well as work practice standards to reduce fugitive dust emissions in the lead oxide unloading and storage area. The standards of performance and work practice standards finalized in 40 CFR part 60, subpart KKa, will apply at all times, including during periods of SSM. The EPA is also finalizing in the new 40 CFR part 60, subpart KKa, the requirements for electronic reporting, monitoring, and other compliance assurance measures such as performance testing every 5 years, quarterly fabric filter inspections, and recording pressure drop or visible emissions readings twice a day for fabric filter systems without a secondary filter or bag leak detection system requirements.

The EPA notes that we are not amending 40 CFR part 60, subpart KK, to add electronic reporting requirements in this action. While it is generally the EPA's practice to implement electronic reporting requirements in each prior NSPS as we conduct reviews and promulgate each new NSPS, 40 CFR part 60, subpart KK, does not impose any regular, ongoing reporting requirements. However, facilities are expected to comply with the applicable electronic reporting requirements that the EPA is finalizing under the new NSPS, 40 CFR part 60, subpart KKa, and the NESHAP.

1. Revised NSPS for Grid Casting Facilities

The standards in 40 CFR part 60, subpart KK, for grid casting, which were established in 1982, are 0.4 milligrams per dry standard cubic meters (mg/dscm) and 0 percent opacity which were based on what was then determined to be the BSER of impingement scrubbers with an estimated 90 percent lead emissions control efficiency. Through the BSER review conducted for the source category, which is documented in the memorandum *Technology Review and NSPS Review for Lead Acid Battery Manufacturing* (hereafter referred to as the "Technology Review Memorandum"), available in the docket for this action, we found that since the promulgation of the NSPS in 1982, it has become feasible and common for lead acid battery manufacturing plants to control lead emissions from grid casting processes with fabric filters. Through this review, we discovered that at least 30 of the 40 facilities currently subject to 40 CFR part 60, subpart KK, are now using fabric filters and these are also sometimes combined with other controls, such as high efficiency particulate air (HEPA) filters or a scrubber to control emissions from grid casting. Furthermore, we did not identify any facilities using only a wet scrubber. Therefore, we concluded at proposal that fabric filters are clearly feasible and well demonstrated as an appropriate control technology for grid casting operations. With regard to control efficiency of a fabric filter, for the February 2022 proposed rule, we assumed control efficiency would be 99 percent, which was based on estimates presented in the background document for the proposed rule in 1980 (45 FR 2790) and in the 1989 EPA technical document titled *Review of New Source Performance Standards for Lead-Acid Battery Manufacture, Preliminary Draft,* October 1989, which is available in the docket for this rulemaking.

At proposal, to assess whether fabric filters are the BSER for controlling lead emissions from grid casting, we examined the costs and emission reductions from installing and operating fabric filters with assumed 99 percent control efficiency at new large facilities (*i.e.,* facilities with capacity to process 150 tons or more of lead per day) and new small facilities (*i.e.,* facilities with capacity to process less than 150 tons of lead per day).[2] We estimated that the cost effectiveness of achieving a 99 percent reduction of lead through the use of fabric filters, as compared to the costs of maintaining the 40 CFR part 60, subpart KK, requirement of a 90 percent reduction of lead through the use of wet scrubbers, would be $333,000 per ton of lead reduced for a new large facility and $524,000 per ton of lead reduced for a new small facility. We found that both of these values are within the range of what the EPA has considered in other rulemakings to be cost-effective for control of lead emissions. Based on this information, we proposed that fabric filters (with an assumed 99 percent control efficiency) represent the new BSER for grid casting, and we proposed to revise the lead emissions limit for grid casting from 0.4 milligrams of lead per dry standard cubic meter of process exhaust (mg/dscm) to 0.04 mg of lead per dscm of process exhaust to reflect the degree of emission limitation achievable through the application of the proposed BSER (*i.e.,* a fabric filter, with assumed improved efficiency of 99 percent versus 90 percent). We also proposed to retain the opacity standard of 0 percent for grid casting.

The EPA received one comment regarding this proposed BSER determination and proposed standard of performance. There were no comments regarding our proposal to retain the opacity standard of 0 percent. The commenter (Battery Council International [BCI]) claimed that the EPA's calculations of the benefits of moving from scrubbers to fabric filters for grid casting and for adding secondary HEPA filters to paste mixing operations (discussed later in this preamble) are flawed because the EPA incorrectly models these filters as control devices with constant, rather than variable, efficiency. The commenter relates that when the amount of lead emissions entering these devices is low, the removal efficiency is far lower than their nominal removal efficiency and that only at the extreme high end of inlet loading concentrations is the nominal removal efficiency obtained. Due to this factor, the commenter states that the EPA's assumed removal efficiency from these devices is unrealistically high. The commenter also states that the removal efficiency can fall below 90 percent compared to the nominal removal efficiency of 99 percent for fabric filters.

The commenter also claimed that the EPA's costs for a new baghouse (also

[2] At proposal, we split the analysis into two size categories that would better represent the source category because of the range in facility size.

referred to as fabric filter system or fabric filters in other parts of this preamble) were underestimated and provided both a cost analysis for a new baghouse in which they assumed the same 99 percent removal efficiency as the EPA did in its analysis of cost effectiveness but used increased equipment costs, and another analysis in which the commenter assumed a removal efficiency of 95 percent along with the increased equipment costs. The claimed results of BCI's analyses showed higher costs per ton of lead emissions removed compared with the results of the EPA analyses.

Considering the available data at the time of proposal, we proposed a limit of 0.04 mg/dscm, which represented the emissions reduction thought possible with the proposed BSER technology (*i.e.,* a fabric filter, assumed to achieve an estimated 99 percent emissions removal efficiency instead of the estimated 90 percent efficiency of the wet scrubber). Based on the commenter's suggestion that emissions removal efficiencies are lower than what the EPA estimated at proposal, we obtained additional stack test data for several facilities to determine what emissions levels are currently achieved by fabric filters. From this data gathering effort, we examined stack test data for eight facilities using fabric filters to control emissions from grid casting, with data for four facilities having stacks that service only grid casting and the other four stacks that service multiple processes. The stack test results show that the four facilities with primary fabric filter systems controlling just grid casting emissions have emissions ranging from 0.011 mg/dscm to 0.1 mg/dscm. More information on the data used in our analysis is detailed in the memorandum *Revised Emission Limits for the Lead Acid Battery Manufacturing Final Rule-Grid Casting and Paste Mixing Operations,* available in the docket for this action. Using these data, we calculated the 99 percent upper prediction limit (UPL) of 0.08 mg/dscm.

The UPL value is the result of the statistical methodology the EPA uses to account for the variability and uncertainty in emissions that occurs over time and over expected varying operating conditions. The EPA has used the UPL to address the variability of emission data in in other rulemakings (*e.g.,* setting MACT standards). The UPL is a value, calculated from a dataset, that identifies the average emissions level that a source or group of sources is meeting and would be expected to meet a specified percent of the time that the source is operating. That percent of time is based on the confidence level used in the UPL equation. The 99 percent UPL is the emissions level that the sources would be predicted to emit below during 99 out of 100 performance tests, including emissions tests conducted in the past, present and future, based on the short-term stack test data available for that source. For more information about this analysis, see the *Upper Prediction Limit for Grid Casting and Paste Mixing Operations at Lead Acid Battery Facilities* (hereafter referred to as "UPL Memorandum") available in the rulemaking docket for this action.

The intent of the EPA at proposal was to set the emissions standard at the level that would reflect the application of the BSER (*i.e.,* a fabric filter). At proposal, we assumed an improved efficiency of the standard of performance reflected the application of fabric filters with 99 percent efficiency to control emissions. We used the control efficiency of 99 percent based on the analysis conducted in the background document for the proposed rule in 1980 (45 FR 2790) to derive the proposed limit of 0.04 mg/dscm. However, based on the comments received and the results of the UPL analysis, we are now analyzing the use of a fabric filter that would achieve an emissions level of 0.08 mg/dscm for our final BSER determination.

We updated our cost analysis for a new source to install a fabric filter system versus a wet scrubber based on comments received from BCI. We agree with the cost estimates provided by the commenter and have used those in an updated cost effectiveness analysis. We estimate that the updated incremental annualized costs of using a fabric filter system are $52,000 for a small plant and $88,000 for a large plant.

We do not agree that a fabric filter system would achieve only 95 percent efficiency for grid casting emissions. Based on the available stack test data, the calculated UPL which accounts for variability, and the calculations described above, the emission limit of 0.08 mg/dscm reflects the use of fabric filters controlling grid casting emissions. To estimate the incremental emissions reductions that would be achieved, we estimated the current limit of 0.4 mg/dscm reflects a 90 percent reduction compared to baseline (uncontrolled) based on the background document for the 1980 proposed rule (45 FR 2790) and in the 1989 EPA technical document cited above, and therefore we estimate that the revised limit (of 0.08 mg/dscm) based on the UPL would represent a 98 percent reduction. As we described in the proposed rule preamble, we estimate lead emissions for a small and large uncontrolled grid casting facility are 0.5 tons per year (tpy) and 1.3 tpy, respectively. We estimate lead emissions for a small and large baseline grid casting facility which is complying with 40 CFR part 60, subpart KK, emission limit of 0.4 mg/dscm which is based on a wet scrubber (with assumed 90 percent efficiency) would be 0.05 tpy and 0.13 tpy, respectively. We estimate lead emissions for a small and large model facility that will comply with an emission limit of 0.08 mg/dscm based on the application of a fabric filter (using the derived 98 percent efficiency described above) are 0.01 tpy and 0.026 tpy, respectively. The incremental lead reduction (from 90 percent to 98 percent) is 0.04 tpy for small facilities and 0.104 tpy for large facilities. We estimate that for a hypothetical new small plant, cost effectiveness is approximately $1.23M/ton of lead reduced and for a hypothetical new large plant, cost effectiveness is $846,000/ton of lead reduced. These cost effectiveness values are within the range of what we have historically accepted in the past for lead. Details regarding our cost estimates are in the *Estimated Cost Impacts of Best System of Emission Reduction Review of 40 CFR Part 60, Subpart KK and 40 CFR Part 63, Subpart PPPPPP Technology Review-Final Rule,* hereafter referred to as "Cost Impacts Memorandum," available in the docket for this action. We conclude that the application of fabric filters to control grid casting emissions is cost-effective and has been adequately demonstrated at existing sources. We have also learned, there may be additional advantages for facilities to use fabric filters instead of wet scrubbers to control grid casting emissions. Some advantages of using fabric filters include: the potential for higher collection efficiency; less sensitivity to gas stream fluctuations; availability in large number of configurations, and that collected material is recovered dry and can be sent to a secondary lead facility for recycling, lowering the hazardous waste disposal costs for facilities. Therefore, based on our analysis and the information above, we have determined that the BSER for grid casting operations is fabric filter systems with an estimated 98 percent control efficiency.

Based on the UPL analysis presented we find that the emission level that appropriately reflects the BSER is 0.08 mg/dscm. In addition, we find that the proposed emissions limit of 0.04 mg/dscm (that reflected an estimated control efficiency of 99 percent efficiency) would go beyond the level of emission limitation generally achievable

through the application of BSER. Based on our analyses, we conclude that additional controls beyond BSER would be needed to meet the proposed limit of 0.04 mg/dscm. Additional controls, such as a secondary HEPA filter, to meet the proposed limit of 0.04 mg/dscm were determined to not be cost-effective at proposal. Based on the revised UPL analysis that considers the data available to the EPA regarding grid casting emissions and accounts for variability within the data, we have determined that the final standard of performance which reflects the BSER (use of a fabric filter system) is a lead emission limit of 0.08 mg/dscm. We are also retaining the 0 percent opacity standard from 40 CFR part 60, subpart KK, for grid casting as proposed.

2. Revised NSPS for Lead Reclamation Facilities

Similar to the standards for grid casting, the standards in 40 CFR part 60, subpart KK, for lead reclamation, which were established in 1982, are 4.5 mg/dscm for lead and 5 percent opacity and were based on impingement scrubbers with an estimated 90 percent lead emissions control efficiency. Through the BSER review conducted for the source category, we found that since the promulgation of the NSPS in 1982, it has become feasible and common for lead acid battery manufacturing plants to control lead emissions from several processes with fabric filters. Through this review, we discovered that no lead acid battery manufacturing facilities currently conduct lead reclamation as the process is defined in 40 CFR part 60, subpart KK. However, there was mention of lead reclamation equipment in the operating permits for two facilities, and that equipment is controlled with fabric filters. In the proposal, we estimated that fabric filters were capable of achieving lead emissions control efficiencies of at least 99 percent. Therefore, we concluded at proposal that fabric filters are feasible and an appropriate control technology for lead reclamation. Like in the analysis for grid casting, to assess whether fabric filters are the BSER for controlling lead emissions from lead reclamation, we examined the costs and emission reductions from installing and operating fabric filters at large and small facilities. In the proposal, we determined that the cost effectiveness of achieving a 99 percent reduction of lead through the use of fabric filters, as compared to the costs of achieving 90 percent reduction of lead through the use of wet scrubbers, would be $130,000 per ton of lead reduced for a large facility and $236,000 per ton of lead reduced for a small facility. We found that both of these values are within the range of what the EPA has considered in other rulemakings to be cost-effective for control of lead emissions. Based on this information, we proposed that fabric filters (with an estimated 99 percent control efficiency) represent the new BSER for lead reclamation, and we proposed to revise the lead emissions limit for lead reclamation to 0.45 mg/dscm to reflect the degree of emission limitation achievable through the application of the proposed BSER. We also proposed to retain in 40 CFR part 60, subpart KKa, the opacity standard of 5 percent.

In addition, under 40 CFR part 60, subpart KK, a lead reclamation facility is defined as a facility that remelts lead scrap and casts it into ingots for use in the battery manufacturing process, and which is not an affected secondary lead smelting furnace under 40 CFR part 60, subpart L. To ensure that emissions are controlled from any lead that is recycled or reused, without being remelted and cast into ingots, the EPA proposed to revise the definition of ''lead reclamation facility'' in 40 CFR part 60, subpart KKa, to clarify that the lead reclamation facility subject to 40 CFR part 60, subpart KKa, does not include recycling of any type of finished battery or recycling lead-bearing scrap that is obtained from non-category sources or from any offsite operation. Any facility recycling these materials through a melting process would be subject to another NSPS (*i.e.,* Secondary Lead Smelting NSPS, 40 CFR part 60 subpart L, or the recently proposed new 40 CFR part 60, subpart La, once finalized).

For the Lead Acid Battery Manufacturing NSPS, 40 CFR part 60, subpart KKa, we also proposed that the remelting of lead metal scrap is considered part of the process where the lead is remelted and used (*e.g.,* grid casting). We also proposed to clarify that recycling of any type of finished battery or recycling lead-bearing scrap that is obtained from non-category sources or from any offsite operations are prohibited at any lead acid battery manufacturing affected facility.

We did not receive any comments on the proposed BSER or lead emission limit for lead reclamation and therefore are promulgating in 40 CFR part 60, subpart KKa, a final standard of performance of 0.45 mg/dscm, which reflects the final BSER for lead reclamation. We are also finalizing in 40 CFR part 60, subpart KKa, as proposed, the opacity standard of 5 percent and the requirement that a facility must use EPA Method 9 to demonstrate compliance with the daily and weekly visible emission observations for lead reclamation as well as during the performance tests required every 5 years.

3. Revised NSPS for Paste Mixing Facilities

The standards in 40 CFR part 60, subpart KK, for paste mixing, which were established in 1982, are 1 mg/dscm for lead and 0 percent opacity and were based on fabric filters with an estimated 99 percent lead emissions control efficiency. Through the current BSER review conducted for the source category, we found that since the promulgation of the NSPS in 1982, high efficiency particulate air (HEPA) filters capable of removing at least 99.97 percent of particles with a size of 0.3 microns (μm) have become readily available. Through this review, we also discovered that at least 16 of the 40 facilities currently subject to 40 CFR part 60, subpart KK, are now using fabric filters with a HEPA filter as a secondary device to control lead emissions from paste mixing processes. Therefore, we concluded at proposal that fabric filters with secondary HEPA filters are clearly feasible and well demonstrated as an appropriate control technology for paste mixing operations. To assess whether fabric filters with secondary HEPA filters are the BSER for controlling lead emissions from paste mixing, we examined the estimated costs and emission reductions that would be achieved by installing and operating HEPA filters as secondary control devices to fabric filters at large facilities and small facilities. We estimated that the cost effectiveness of secondary HEPA filters achieving an additional 99.97 percent reduction of lead, as compared to the costs of a primary fabric filter system able to maintain the current limit of 1 mg/dscm (based on an estimated 99 percent reduction of lead), would be $888,000 per ton of lead reduced for a large facility and $1.68 million per ton of lead reduced for a small facility. At proposal, we determined that the cost effectiveness estimate for large facilities is within the range of what the EPA has considered in other rulemakings to be cost-effective for control of lead emissions, while the estimate for small facilities is not within this range. Based on this information, we proposed that fabric filters with secondary HEPA filters with 99.97 percent control efficiency represent the new BSER for paste mixing at large facilities, and we proposed to revise the lead emissions limit for paste mixing at large facilities to 0.1 mg/dscm to reflect the degree of emission limitation achievable through

the application of the proposed BSER. For small facilities we proposed to retain in 40 CFR part 60, subpart KKa, the standard of performance of 1 mg/dscm based on the application of fabric filters (with estimated 99 percent control efficiency). We also proposed to retain the 0 percent opacity standard from 40 CFR part 60, subpart KK, for paste mixing facilities in 40 CFR part 60, subpart KKa.

We received three comments regarding the proposed revised emission limit of 0.1 mg/dscm for large facilities and the proposal to retain the lead standard of 1.0 mg/dscm from 40 CFR part 60, subpart KK, for small facilities. We did not receive any comments on the proposal to retain the opacity standard of 0 percent. The three commentors, including environmental groups, Clarios, and BCI, asked that the EPA reconsider allowing smaller pasting lines to emit significantly more lead than large pasting lines and asked that the EPA require all pasting lines to achieve the same stringent level of control.

One commenter (Clarios) stated that the EPA did not evaluate the use of modern fabric filter materials in existing primary filter systems when it performed its analysis of control technologies, and asserted that, since all pasting lines already have primary fabric filter systems in place, there would essentially be no capital costs other than the cost for higher quality bags for both large and small existing facilities to meet the 0.1 mg/dscm (0.0000437 gr/dscf) limit for paste mixing that was proposed for large facilities. The commenter stated that modern filtration materials used in baghouses today, especially those coupled with engineered membranes, provide warranted removal efficiencies of 99.995% of lead at 1 micron. The commenter provided test results reported by one filter manufacturer to demonstrate this removal rate. The commenter also stated that it has found that modern primary filter substrates, such as expanded polytetrafluoroethylene (ePTFE) lined polyester bags, achieve emission reductions equal to or greater than that of secondary filters, including those designated as high efficiency particulate air (HEPA) filters. The commenter provided the results of 23 stack tests performed over 21 years for its one pasting line in the U.S., which is controlled by a primary dust collector using the ePTFE filters. The stack test results show that lead emissions are consistently below the proposed limit of 0.1 mg/dscm using this emission control configuration. The commenter stated that secondary systems, such as HEPA, are not needed to meet the proposed limit and will come at a much higher cost, but they may provide additional benefit as a control redundancy for facilities where multiple levels of protection are appropriate. The commenter provided example prices from a vendor of different types of filter bags, showing a range in price from $14.60 to $29.64 per bag. The commenter requested that the EPA consider the cost of facilities using primary systems alone, with modern fabric filters, as an effective method of controlling emissions at both small and large facilities.

BCI stated that the proposal to distinguish between small and large facilities is problematic for several reasons. First, the commenter claims, there is insufficient guidance about how to calculate the plant capacity to process lead, which will lead to different interpretations by state enforcement agencies. The commenter adds that there is no rationale presented as to why the capacity of the plant, rather than the paste mixing operation, is the driver for varying emission limits for the paste mixing facility. According to the commenter, another problem is that plants near the capacity limit would be disincentivized to make capital improvements or consolidate operations if it would put them over the limit. The commenter also states that paste mixing sources have the highest moisture among the facility processes and often must be blended with other sources if they are to be controlled by a fabric filter. They stated that there are facilities that use wet scrubbers to control paste mixing that the EPA has not considered. The commenter says that a revised limit of 0.1 mg/dscm will also complicate testing and require more implementation of the rule provision that allows for the calculation of an equivalent standard for the total exhaust from commonly controlled affected facilities when two or more facilities at the same plant (except the lead oxide manufacturing facility) are ducted to a common control device). The commenter asserts that in view of these considerations, the EPA should abandon the two-tier approach, and if it is intent on altering the emissions standards for paste mixing, the EPA should have a single standard that applies to all facilities that reasonably reflects the actual emissions reductions achieved using secondary HEPA.

In reference to the proposed standard for small facilities, the environmental group commenters asserted that the EPA must eliminate what they refer to as emission control exemptions for small facilities and require all facilities to add secondary HEPA filters on the paste mixing process. Their comment states that the EPA's reliance on outdated information from the 1989 draft NSPS review to exempt facilities from pollution control is arbitrary and capricious. The comment adds that, because the EPA did not engage in new data collection efforts for this rulemaking, it is unclear whether the data used to determine whether a facility is ''small'' or ''large'' and the following control technology examples are outdated. The commenters remarked that the EPA's decision to aggregate the ''small'' and ''medium'' sized facility categories included in the 1989 draft NSPS review into a single ''small'' facility category for this action without providing an explanation of the basis for this decision is arbitrary and capricious. The commenters also assert that, by combining small and medium facilities in one group, the EPA artificially reduced the incremental cost effectiveness of requiring this group of facilities to adopt secondary HEPA filter on the paste mixing process, thus arbitrarily exempting certain medium facilities from this requirement. The commenter adds that due to the harmfulness of lead at low exposure levels, the EPA should not use cost as the sole justification for not requiring additional health protections.

We agree that modern filter media are capable of achieving emissions levels achieved by more traditional filter media with the addition of HEPA filters. Considering these comments, the EPA has re-evaluated the BSER and the emissions limit for paste mixing. As discussed above, at proposal, we determined that many facilities are controlling emissions from paste mixing using HEPA filters, which reduce emissions much beyond the requirements of the current standards. However, at proposal we found that it was not cost-effective for all facilities to add HEPA filters, depending on their existing emissions and emissions controls in place. In an attempt to distinguish which facilities could apply this technology in a cost-effective manner, at proposal we divided the facilities into classes determined by the amount of lead processed daily at the facility. We then proposed that the use of HEPA filters represented the BSER for large facilities, while continuing to determine that the application of primary fabric filter systems represented BSER for small facilities. We did not propose any exemptions for small facilities as the commenter claimed.

Based on the comments received, we have updated our analysis and our cost

estimates to reflect the use of expanded polytetrafluoroethylene (ePTFE) bags in a primary fabric filter system (*i.e.,* baghouse) without the addition of a secondary filter. Details regarding the assumptions made in our cost estimates are in the Cost Impacts Memorandum available in the docket for this action. We estimate that the incremental initial (*e.g.,* capital) costs for typical small facilities (those that process less than 150 tpd of lead) to replace their current standard polyester bags with ePTFE bags would be $18,000 per facility and the incremental annualized costs would be $9,000 per facility. For a large facility, the estimated incremental initial costs are $60,000 per facility and the incremental annualized costs are estimated to be $30,000 per facility. The estimated lead reductions are the same as those we found for the use of a secondary HEPA filter at proposal, at 0.1 tpy for a large source and 0.03 tpy for a small source, and therefore cost effectiveness for both a typical small and large facilities is $300,000 per ton of lead reduced. This cost effectiveness is well within what the EPA had historically accepted in past rules addressing lead. As a commenter noted, a few facilities use wet scrubbers to control paste mixing emissions or they mix gas streams with the paste mixing emissions to control them with fabric filtration. If a new facility would choose to install a wet scrubber to control their paste mixing operation, there are models of wet scrubbers capable of achieving 99.9 percent removal efficiency, and it has been shown to be feasible to add a secondary HEPA filter on a primary wet scrubber. In addition, wet scrubber technology to control paste mixing emissions has been adequately demonstrated to be capable of achieving the 0.1 mg/dscm emission limit, as discussed in section III.B.3.

As discussed above, high efficiency filters such as ePTFE filters have been demonstrated and are a feasible control technology for paste mixing. In addition, the estimated cost effectiveness for both large and small facilities is within the range of values accepted previously by the EPA addressing lead. Furthermore, we have not identified any significant non-air environmental impacts and energy requirements. Therefore, the EPA has determined that ePTFE filters (or other effective control devices) that are capable of meeting a limit of 0.1 mg/dscm represent the new BSER for most paste mixing facilities. One exception is for very small facilities with very low flow rates, which is described in more detail below.

We used the UPL to assist in informing the appropriate lead emission limit for the paste mixing process based on the updated BSER of high efficiency bags (or other effective control devices) that are capable of meeting a limit of 0.1 mg/dscm (with estimated 99.995% efficiency). We calculated a 99 percent UPL using stack test data for units with only a fabric filter (*i.e.,* no secondary filter) controlling emissions from paste mixing processes. We excluded stack tests for fabric filters controlling emissions from multiple processes. The EPA's methodology of the UPL for establishing the limits is reasonable and represents the average emissions achieved by sources with consideration of the variability in the emissions of those sources. The resulting UPL is 0.095 mg/dscm, which is very close to the proposed limit of 0.1 mg/dscm and therefore provides further support that an emissions limit of 0.1 mg/dscm is appropriate for most facilities. Details on the methodology used in determining the UPL for this process are found in the UPL Memorandum available in the docket for this action. Based on the limited stack test data and taking comments into consideration, we are promulgating in 40 CFR part 60, subpart KKa, an emission limit of 0.1 mg/dscm for paste mixing at all facilities (both large and small). In consideration of the comments provided on the proposed rule, as well as the information provided by the commenters and further investigation by the EPA, we have determined that secondary HEPA filters, although could be used to meet the proposed emission limit, are not necessary to meet an emission limit of 0.1 mg/dscm for paste mixing for all facilities (both large and small). As required by CAA section 111, the EPA prescribes requisite emission limitations that apply to the affected facilities rather than specific technologies that must be used. Facilities will have the option to meet the limit in any manner they choose, including the use of modern primary filter media in a primary filter system or application of a secondary filter. Given that our analyses indicate that the proposed emission level can be achieved at lower costs than we estimated at proposal for all paste mixing facilities, we are promulgating a requirement that paste mixing operations, regardless of daily lead throughput, comply with a limit of 0.1 mg/dscm.

However, in our analysis of existing facilities (as discussed in section III.B.3 below), we found that it may be particularly costly for very small facilities with very low flow rates and already low lead emissions to comply with the revised concentration-based emission limit of 0.1 mg/dscm. For example, we know of one very small facility that, based on its most recent stack tests, emits an estimated 4 lbs/year (0.002 tpy) of lead from its paste mixing operations using standard fabric filters. However, based on the available data, that facility had one test result (0.11 mg/dscm) indicating it may not be able to comply with a 0.1 mg/dscm limit without improving the control device (a fabric filter). In our assessment, we assume this facility would have to replace its current filters with high efficiency filters in order to meet the 0.1 mg/dscm limit. We estimate annualized costs would be approximately $9,000 and would achieve 0.0019 tpy (3.7 lbs) of lead reductions, for a cost effectiveness of $4.7M/ton. This is considerably higher than cost effectiveness values we have historically accepted for lead. Similarly, as discussed at proposal, the use of secondary filters is also not cost-effective for these very small facilities. Accordingly, the EPA has determined that the BSER for these facilities continues to be the use of a standard fabric filter.

Based on available information, these very small facilities with already low lead emissions typically have very low flow rates, and therefore meeting a concentration-based limit of 0.1 mg/dscm is not cost-effective even though their emissions rate of lead (*e.g.,* in lbs/hr) is quite low. Therefore, the EPA is also promulgating an alternative, mass-per-time based lead emissions limit of 0.002 lbs/hr, which is the rate that the EPA has determined is achievable from the use of a standard fabric filter at these types of very small facilities, for total paste mixing operations. By total paste mixing operations, we mean that in order to meet this alternative limit a facility must show compliance by summing emissions from each stack that emits lead from paste mixing operations. More information on the data used in our analysis is detailed in the memorandum *Revised Emission Limits for the Lead Acid Battery Manufacturing Final Rule-Grid Casting and Paste Mixing Operations,* available in the docket for this action. This alternative lead emission limit only applies to devices controlling paste mixing emissions and may not apply to a control device with multiple gas streams from other processes. Therefore, lead acid battery manufacturing facilities can demonstrate compliance with the paste mixing standards by

either meeting a concentration-based limit of 0.1 mg/dscm from all paste mixing emissions sources at that facility, or demonstrate that the total lead emissions from all paste mixing operations at that facility are less than 0.002 lbs/hr. This alternative mass-rate-based emission limit of 0.002 lb/hour will provide additional compliance flexibility for very small facilities with low emissions and low flow rates to comply with the paste mixing emissions standards.

We anticipate that the vast majority of facilities will choose to comply with the 0.1 mg/dscm emission limit because the alternative limit is a paste mixing facility-wide emission limit and would likely be difficult to meet for stacks with higher flow rates. We further anticipate that only very small facilities with very low-flow rates (and already low emissions) will choose to comply by demonstrating compliance with the alternative emission limit because larger facilities with higher flow rates would likely need additional controls to comply with this alternative limit. We determined that the alternative limit of 0.002 lbs/hr is cost-effective for these very small facilities with low flow rates. Therefore, for very small facilities with very low flow rates and already low emissions we have determined that the BSER is a standard fabric filter, and 0.002 lbs/hour is the emission level achievable for these types of facilities reflecting the BSER. We are also finalizing, as proposed, the opacity limit of 0 percent for paste mixing operations.

4. Revised NSPS for Fugitive Dust Emissions

The standards in 40 CFR part 60, subpart KK, do not include requirements to reduce or minimize fugitive lead dust emissions. These fugitive dust emissions would include particulate lead that becomes airborne and is deposited to outdoor surfaces at or near the facilities and that may become airborne again via wind or surface disturbance activities, such as vehicle traffic. Through the BSER review conducted for the source category, we found that since the promulgation of the NSPS in 1982, other rules, including the NESHAPs for primary lead smelting and secondary lead smelting, have required new and existing sources to minimize fugitive dust emissions at regulated facilities through the paving of roadways, cleaning roadways, storing lead oxide and other lead bearing materials in enclosed spaces or containers, and other measures. Through this review, we also discovered that several facilities currently subject to 40 CFR part 60, subpart KK, have requirements to reduce fugitive dust emissions through similar, specific work practices in their operating permits. Because these fugitive lead dust emissions from the lead acid battery manufacturing source category emissions are not ''emitted through a conveyance designed to emit or capture the pollutant,'' pursuant to CAA section 111(h), we considered whether a work practice requirement to develop and implement a fugitive dust minimization plan, including certain elements, would be appropriate for the lead acid battery manufacturing source category. Such elements could include the following:

i. Clean or treat surfaces used for vehicular material transfer activity at least monthly;

ii. Store dust-forming material in enclosures; and

iii. Inspect process areas daily for accumulating lead-containing dusts and wash and/or vacuum the surfaces accumulating such dust with a HEPA vacuum device/system.

We estimated at proposal that the cost burden associated with a requirement to develop and implement a fugitive dust plan, including the elements described above, would be $13,000 per facility per year and would prevent significant releases of fugitive dust emissions. Based on our review of permit requirements, the requirements of other regulations for lead emissions, and the estimated costs of a fugitive dust minimization program, we proposed to include a new requirement for lead acid battery manufacturing facilities to develop and implement a fugitive dust minimization plan that included, at a minimum, the elements listed above.

We received three comments regarding the proposed fugitive dust minimization work practice standard. Environmental groups generally supported the proposal, but they commented that the EPA must require the use of fenceline monitoring and corrective action tied to that monitoring as well as full enclosure negative pressure requirements. We disagree that the use of fenceline monitoring and corrective action tied to that monitoring is an appropriate work practice standard for this source category. The EPA's response to these comments is in the Comment Summary and Response Document, available in the docket for this rulemaking.

One commenter (Clarios) stated that the EPA included several undefined terms and concepts for its proposed fugitive dust minimization plan that introduce uncertainty and the potential for misinterpretation. The commenter recommends that the EPA adopt definitions and parameters similar in approach to those included in the fugitive dust plan requirements for the Secondary Lead Smelting NESHAP. The commenter notes that such definitions and parameters should be designed to address the configuration of battery manufacturing facilities, which may have multiple process lines with different controls and control systems. The commenter mentions that there are areas of the plants that are lead-free production zones, where lead is not used or handled, and these areas should not be included in the scope of a fugitive dust minimization plan. The commenter adds that including lead-free areas in a fugitive dust minimization plan would add to the costs of implementing the plan, such that costs are likely to exceed $200,000 per plant in the first year alone. The commenter remarks that in plants where negative air pressure is used as an emissions control, the air systems are designed and balanced to protect lead-free areas and isolate areas where negative pressure is used. The commenter also cautions that adding negative pressure or fugitive dust control in lead-free areas may thwart the design and operation of existing process emission control equipment by changing air balances and flows. The commenter suggests that lead-free process areas (*i.e.,* areas where fugitive lead dust is controlled to concentrations less than the controlled emission limits in Table 1 of the proposed revisions to 40 CFR part 63, subpart PPPPPP) should be excluded from the requirements of the fugitive emission work practices requirements in the NSPS and NESHAP.

BCI also commented on the EPA's proposed cost estimates stating that they cannot be fully estimated because the EPA is proposing minimum requirements that must be reviewed and approved by ''the Administrator or delegated authority.'' They provided estimates for the basic requirements and claim that costs for developing the fugitive dust plan would be between $25,000 and $35,000 per facility and estimate $250,000 per facility to implement the plan. They also claim the EPA's proposal is arbitrary and capricious because the proposal did not estimate expected emissions reductions that will result from the fugitive emissions work practices it is proposing.

We do not agree with the commenter (BCI) that our proposal to require fugitive dust minimization work practices is arbitrary and capricious. For this rule, we learned through discussions with states, regions, and industry that there is a potential for

fugitive dust emissions from this source category. In addition, during the technology review it was found that nine states have fugitive dust minimization requirements in the permits for 15 different lead acid battery facilities. Furthermore, based on the modeling screening analysis completed and described in the proposal, in comparing modeled concentrations at monitor locations to ambient lead measurements at monitors, emissions from a subset of facilities were underestimated. The memorandum, *Assessment of Potential Health Impacts of Lead Emissions in Support of the 2022 Lead Acid Battery Manufacturing Technology Review of Area Sources Proposed Rule,* available in the docket for this action, discusses that un-reported fugitive emissions and re-entrainment of historical lead dust are two factors, among others, at lead acid battery facilities that may cause the model to underpredict when compared to the ambient lead measurement. Generally, it is difficult to quantify emissions from fugitive dust emission sources because they are not released at a common point, such as a stack and therefore they cannot easily be measured. However, for the reasons discussed above, we have determined work practice standards to minimize fugitive dust emissions at lead acid battery manufacturing facilities are appropriate to address an important source of lead pollution.

In consideration of the other comments, we have reviewed the regulatory language and agree with the commenters (BCI and Clarios) that further explanation should be provided to clarify the areas that are required to be included in the fugitive dust minimization plan. As it was our intent at proposal to include only the areas of the facilities that were most likely to have fugitive dust that would contribute to lead emissions from the facility, we reviewed information on the facilities, their processes, and facility configurations to determine the likely areas where such fugitive dust emissions would occur. Processes such as grid casting, paste mixing operations, and three-process operations (as described above in section II.C) are enclosed. In order to maintain Occupational Safety and Health Administration (OSHA) requirements for ambient lead concentrations inside a facility and worker safety, fugitive emissions are already controlled at lead acid battery manufacturing facilities in these process areas. In addition, we are finalizing in 40 CFR part 60, subpart KKa, an opacity limit of 0 percent which minimizes fugitive emissions from the primary processes (grid casting, paste mixing, three-process operations and other-lead emitting sources) as proposed. Available information, including information provided by Clarios, indicates that the area at a lead acid battery manufacturing facility with the highest potential for fugitive lead dust emissions is the lead oxide unloading and storage operations area. When lead oxide is purchased from a third party, it is transported by truck and conveyed by pipe directly into storage silos. As stated in the memorandum *Estimating and Controlling Fugitive Lead Emissions from Industrial Sources* (EPA–452/R–96–006), on rare occasions, these pipe connections may fail which results in a release of lead oxide. From this review and from discussion of the matter with the commenter, we determined that lead oxide loading and unloading areas (including lead oxide storage operations) are the areas at a facility where such fugitive dust emissions would most likely occur. Therefore, we have revised the regulatory language to specify that facilities must develop and operate according to a fugitive dust minimization plan that applies to lead oxide unloading areas and the storage of dust-forming materials containing lead.

We agree with the commenters regarding the costs to develop and implement a fugitive dust minimization plan for all process areas. Thus, taking the comments into consideration and appropriately narrowing the areas where fugitive dust minimization work practices are required, we re-evaluated the costs of developing and implementing a fugitive dust minimization plan in the lead oxide unloading and storage areas only. We estimate the initial costs to develop a fugitive dust minimization plan are $7,900 per facility. We estimate that the costs to implement the fugitive dust plan in the lead oxide unloading area includes the purchase of a ride-on HEPA vacuum and a portable HEPA vacuum, as well as the labor costs for performing the required cleaning tasks. We estimate the total costs for new sources to develop and implement a fugitive dust plan for the lead oxide unloading and storage area will be $22,000 during the year the facility develops the plan. Then, once the plan has been developed, the estimated annualized cost to implement the plan is approximately $14,000 per facility per year. The total costs are slightly higher than at proposal because, based on discussions with the commenter, we added additional costs for managerial oversight of the fugitive dust minimization plan and its implementation. But the costs of fugitive dust minimization work practices are less than 1 percent of each facility's annual revenues and are considered to be reasonable.

The final BSER for minimizing fugitive dust emissions is lead dust minimizing work practices in the lead oxide unloading and storage area. The work practices include cleaning or treating surfaces traversed during vehicular lead oxide transfer activity at least monthly; storing dust-forming material in enclosures; and examining process areas daily for accumulating lead-containing dusts and wash and/or vacuum the surfaces accumulating such dust with a HEPA vacuum device/system. The work practices also include a requirement that if an accidental leak, spill or breakage occurs during the unloading process, the area needs to be washed and/or vacuumed immediately to collect all the spilled or leaked material. As stated above, pursuant to CAA section 111(h), these fugitive lead dust emissions from the lead acid battery manufacturing source category emissions are not ''emitted through a conveyance designed to emit or capture the pollutant.'' Therefore, since it is not possible to set a numerical emission limit, we are finalizing a work practice standard to develop and implement a fugitive dust minimization plan.

5. NSPS 40 CFR Part 60, Subpart KKa, Without Startup, Shutdown, and Malfunctions Exemptions

Consistent with *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008), the EPA has established standards in this rule that apply at all times. We are finalizing in 40 CFR part 60, subpart KKa, specific requirements at 40 CFR 60.372a(a) that override the 40 CFR part 60 general provisions for SSM requirements. In finalizing the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not finalized alternate standards for those periods. The main control devices used in this industry are fabric filters. We have determined that these control devices are effective in controlling emissions during startup and shutdown events. Prior to proposal, we discussed this issue with industry representatives and asked them if they expect any problems with meeting the standards at all times, including periods of startup and shutdown. The lead acid battery manufacturing industry did not identify (and there are no data or public comments indicating) any specific problems with meeting the standards at

all times including periods of startup or shutdown.

In addition, this final action requires compliance with the standards at all times including periods of malfunction. Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead, they are, by definition, sudden, infrequent, and not reasonably preventable failures of emissions control, process, or monitoring equipment. (40 CFR 60.2). The EPA interprets CAA section 111 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 111 standards. Nothing in CAA section 111 or in case law requires that the EPA consider malfunctions when determining what standards of performance reflect the degree of emission limitation achievable through ''the application of the best system of emission reduction'' that the EPA determines is adequately demonstrated. While the EPA accounts for variability in setting emissions standards, nothing in CAA section 111 requires the Agency to consider malfunctions as part of that analysis. The EPA is not required to treat a malfunction in the same manner as the type of variation in performance that occurs during routine operations of a source. A malfunction is a failure of the source to perform in a ''normal or usual manner'' and no statutory language compels the EPA to consider such events in setting CAA section 111 standards of performance. The EPA's approach to malfunctions in the analogous circumstances (setting ''achievable'' standards under CAA section 112) has been upheld as reasonable by the court in *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 606–610 (2016).

6. Testing and Monitoring Requirements

a. Performance Tests

The regulations in 40 CFR part 60, subpart KK, only include a requirement to conduct an initial performance test to demonstrate compliance with the emissions standards for each type of equipment at lead acid battery manufacturing plants. Through the BSER review conducted for the source category, we found that since the promulgation of the NSPS in 1982, the EPA has proposed and promulgated periodic performance testing in other recent rulemakings. Through this review, we also discovered that almost half of the 40-lead acid battery manufacturing facilities currently subject to 40 CFR part 60, subpart KK, are required by state and local agencies to conduct periodic performance tests on a schedule that varies from annually to once every 5 years. Therefore, we determined at proposal that periodic performance testing is a development in operational procedures that will help ensure continued compliance with the requirements in 40 CFR part 60, subpart KKa. At proposal, we determined that the incremental costs of requiring performance tests of lead emissions on this 5-year schedule would be approximately $23,000 to test one stack and an additional $5,500 for each additional stack testing during the same testing event. We also determined that to minimize these costs, it would be possible, as allowed for in some other EPA NESHAP regulations with periodic testing requirements, that in some instances where a facility has more than one stack that exhausts emissions from similar equipment and with similar control devices, one representative stack could be tested to demonstrate compliance with the similar stacks. For this, a stack testing plan demonstrating stack representativeness and a testing schedule would be required for approval by the EPA or the delegated authority. Based on the costs and the importance of periodic testing to ensure continuous compliance, we proposed to require periodic testing for each emissions source once every 5 years, with the ability for facilities to test representative stacks if a stack testing plan and schedule is approved by the EPA or delegated authority.

We received three comments on this proposal, which did not cause the Agency to change course from what was proposed. We respond fully to these comments in the Comment Summary and Response Document, available in the docket for this rulemaking.

As explained in the Comment Summary and Response Document, after considering these comments, the Agency is finalizing the additional performance testing as proposed. Facilities subject to 40 CFR part 60, subpart KKa, will be required to test stacks and/or representative stacks every 5 years.

b. Fabric Filter and Scrubber Monitoring, Reporting, and Recordkeeping Requirements That Are Consistent With the Requirements in 40 CFR Part 63, Subpart PPPPPP

We proposed to add monitoring, reporting, and recordkeeping requirements associated with the use of fabric filters to the new NSPS, 40 CFR part 60, subpart KKa, consistent with the area source GACT requirements in the Lead Acid Battery Manufacturing NESHAP at 40 CFR part 63, subpart PPPPPP. This was proposed because many of the lead acid battery manufacturing facilities use fabric filter controls, and the 1982 NSPS 40 CFR part 60, subpart KK, does not include compliance requirements for these devices. We also proposed to add an additional requirement to monitor and record liquid flow rate across each scrubbing system at least once every 15 minutes. The regulations in 40 CFR part 60, subpart KK, only require monitoring and recording pressure drop across the scrubber system every 15 minutes. We received no comments on this issue. Therefore, we are promulgating what was proposed as the final compliance assurance measures.

We expect that there would be no costs associated with the requirement for new, modified, and reconstructed sources to monitor and record liquid flow rate across each scrubbing system at least once every 15 minutes because this is standard monitoring equipment in scrubbing systems.

In addition, to reduce the likelihood of malfunctions that result in excess lead emissions, the EPA also proposed to increase the frequency of fabric filter inspections and maintenance operations to monthly for units that do not have a secondary filter, and to retain the requirement for semi-annual inspections for units that do have a secondary filter. We received one public comment from environmental groups in support of additional inspections and one comment from Clarios against monthly inspections. More details on these comments and our responses are in the Comment Summary and Response Document available in the docket for this action. After consideration of public comments on this issue, we are finalizing increased fabric filter inspections to quarterly for all fabric filter systems (both primary and secondary). We expect that there would be no additional costs to add fabric filter monitoring, reporting and recordkeeping requirements that are consistent with the NESHAP beyond what is discussed in section III.A.6.c for bag leak detection requirements and section III.B.6.b for additional fabric filter inspections.

c. Bag Leak Detection Systems

The standards in 40 CFR part 60, subpart KK, do not include requirements to install or operate bag leak detection systems. These systems typically include an instrument that is capable of monitoring particulate matter loadings in the exhaust of a baghouse to detect bag failures (*e.g.,* tears) and an alarm to alert an operator of the failure.

These bag leak detection systems help ensure continuous compliance and detect problems early on so that damaged fabric filters can be quickly inspected and repaired as needed to minimize or prevent the release of noncompliant emissions. Through the BSER review conducted for the source category, we found that since the promulgation of the NSPS in 1982, other rules, including the 40 CFR part 60, subpart Y, Coal Preparation and Processing Plants NSPS (74 FR 51950), and 40 CFR part 60, subparts LLLL and MMMM, New Sewage Sludge Incinerator Units NSPS (81 FR 26039), have required new sources to have bag leak detection systems for fabric filter-controlled units. Through this review, we also discovered that at least eight facilities currently subject to 40 CFR part 60, subpart KK, have bag leak detection systems. Therefore, we determined at proposal that the use of bag leak detection systems is a development in operational procedures that will help ensure continued compliance with the NSPS by identifying and allowing for correction of bag leak failures earlier than would occur through daily visual emissions inspections or pressure drop monitoring. We considered whether a requirement to install and operate a bag leak detection system would be appropriate for the lead acid battery manufacturing source category. We examined the costs of installing and operating bag leak detection systems at large and small facilities and estimated that the capital costs of a system at a new facility would be approximately $400,000 for a large facility and $200,000 for a small facility, with annual costs of approximately $84,000 for a large facility and $42,000 for a small facility. We found that the costs for small facilities could impose significant negative economic impacts to those companies. Based on this information, to help ensure continuous compliance with the emission limits without imposing significant economic impacts on small facilities, we proposed to require bag leak detection systems only for large facilities.

We received comments from environmental groups on this proposed requirement. They are generally supportive of requiring bag leak detection systems but ask that we also require small facilities to install bag leak detection systems. The commenter asserted that the EPA arbitrarily exempted small facilities from the bag leak detection system requirements because an analysis of cost effectiveness was not performed, and the EPA's finding that bag leak detection systems are not cost efficient for ''small'' facilities is unsupported by facts in the record. The commenter adds that due to the harmfulness of lead at low exposure levels, the EPA should not use cost as the sole justification for not requiring additional health protections. We also received a comment from BCI regarding the cost estimates used in the proposal claiming that they are outdated and underestimated, but BCI did not provide any data to support this claim. We conducted additional research on the costs of bag leak detection, and we did not find evidence that our estimates at proposal are outside the range of expected values. We therefore have not revised our estimated costs for bag leak detection except to update the value of inflation. We have, however, as discussed below, reconsidered the proposal to require bag leak detection at only large new, modified and reconstructed sources.

Based on consideration of comments, we are finalizing a requirement that new sources of all sizes under 40 CFR part 60, subpart KKa, that do not have a secondary filter must install and operate bag leak detection systems on baghouses. While the cost of bag leak detection systems can be substantial for existing facilities, it is easier and less expensive for a new facility to incorporate bag leak detection in their construction design than it is for a facility to retrofit their current devices. Therefore, for new sources, we consider the cost of bag leak detection reasonable. For modified and reconstructed sources, we are adding the use of bag leak detection systems as an option and provide operating limits and monitoring parameters as well as recordkeeping and reporting requirements for facilities that choose to install bag leak detection, but we are not requiring these systems for modified or reconstructed facilities. As discussed in the proposal, the costs of retrofitting an existing facility with bag leak detection on baghouses with no secondary filter could be especially burdensome for smaller facilities and could impose significant economic impacts (greater than 1 percent of their annual revenues) on some of those companies. We estimate the capital costs for a facility with four fabric filter systems are $281,000 and annual costs are $56,000 per year. We estimate that capital costs for a facility with 12 fabric filter systems are $842,000 and annual costs are $169,000 per year. While considering the number of fabric filter systems at existing facilities subject to 40 CFR part 60, subpart KK, are as high as 100 fabric filter systems, and after further consideration of the costs and taking comments into consideration, we conclude that the cost to retrofit existing lead acid battery manufacturing sources, both large and small facilities, with bag leak detection would be burdensome. Therefore, we are not requiring bag leak detection systems for existing sources that modify or reconstruct.

After consideration of comments on bag leak detection, because we have determined not to require existing sources that may modify or reconstruct to install bag leak detection, we have also examined the other fabric filter monitoring requirements. As proposed, new, modified and reconstructed sources under 40 CFR part 60, subpart KKa, must follow the other fabric filter monitoring requirements which include pressure drop recording, visible emission observations and inspections. We are finalizing an increased frequency of fabric filter inspections as discussed in section III.A.6.b. In addition, as an outgrowth of comments, we are finalizing an increase in fabric filter monitoring requirements (*i.e.,* pressure drop and visible emissions readings) from once per day to twice per day for fabric filters without a secondary filter. Specifically, we are promulgating a requirement that for fabric filters without a secondary filter, facility operators must do one of the following measurements daily if the results of the most recent performance test is greater than 50 percent of the applicable lead emission limit: (1) record pressure drop two times per day with a minimum of 8 hours between the recordings; or (2) conduct visible emission observations two times per day with a minimum of 6 hours between observations. For fabric filters without a secondary filter that have performance test results less than 50 percent of the applicable emissions limit, we are maintaining the requirement that facilities must do one of the following: (1) record pressure drop at least one time per day; or (2) conduct visible emission observations at least one time per day. We are also retaining as proposed the requirement for fabric filter systems with a secondary filter to record pressure drop weekly and conduct weekly visible emission observations. The costs for the additional pressure drop recording requirement for new, modified and reconstructed sources under the new NSPS subpart are the same as estimates for the NESHAP and are discussed in section III.B.6.c.

7. Other Actions

a. Clarification of Lead Oxide Manufacturing Emission Limit

We proposed to retain the lead oxide manufacturing emission limit. However, we received two comments asking the EPA to address apparent issues with the emission limit. As discussed below, we are modifying the proposal after taking the comments summarized here into consideration. One commenter (Clarios) noted that the lead oxide production process emission limits in both the NSPS and NESHAP are production based, while all the other lead acid battery production process emission limits are concentration based. The commenter opined that the EPA set the production-based limit for lead oxide production because only one production-based data point was available when the NSPS was developed in 1982. The commenter suggested that the limit be changed to a concentration-based limit to match the format of the other battery production process limits. The commenter stated that this would allow facilities more flexibility to apply control strategies in a cost-effective manner by being better able to plan and coordinate their operations, especially in multi-process facilities; simplify the environmental management process; and allow for better operational options. The commenter provided summaries of emissions testing data for three of its facilities, which the commenter says demonstrate that dramatically lower emissions levels than the current production-based emission limit are achievable with commonly available filter technologies. The commenter noted that each facility for which data were provided controls emissions by way of a process dust collector equipped with primary filters and a secondary bank of filters to provide system redundancy. The commenter hopes that by providing this information, the EPA can consider the level of control that is available today with modern lead oxide production facilities and use this information to evaluate an appropriate emission limit for lead oxide production processes and transition to a concentration-based limit.

Another commenter (BCI) requests that the EPA clarify that the lead oxide production facility 5.0 mg/kg production-based standard should be applied only to the direct product collector baghouses and that any other local exhaust ventilation or building ventilation exhausts serving lead oxide production areas should be considered ''other lead-emitting operations'' subject to the 1.0 mg/dscm concentration-based standards. The commenter suggests the EPA could clarify this in the preamble to the final rule or revise the definition of ''lead oxide manufacturing facility'' to apply only to the direct process baghouse exhausts. The commenter explained that at the time of the original promulgation of the NSPS in the 1980s, it was typical that the only ventilation and emission points from lead oxide production operations was the exhaust from the lead oxide production baghouses. The commenter further explained that these baghouses are integral to the process, in that the lead oxide captured in these baghouses is the intended product of that operation and are part of the production process rather than being systems intended to reduce indoor lead exposures and minimize exterior emissions. The commenter adds that as such, it was reasonable that the performance limitation on the direct process baghouse exhausts in lead oxide production areas were expressed in units of mg/kg or lb/ton. However, the commenter notes that since the 1980's, it has become increasingly common for facilities to have installed local exhaust ventilation hooding on some material transfer points and other sources in the lead oxide production areas and may also now direct room air from lead oxide production areas to baghouses for exhaust control. The commenter states that these emission sources should not be assessed with or against the 5.0 mg/kg standard for the direct process baghouse exhausts.

We agree with the commenter that the lead oxide manufacturing emissions limit was intended to apply only to the primary emissions sources and their emission control devices (*i.e.,* lead oxide production fabric filter baghouses). In the final rule, we are clarifying that the lead oxide manufacturing facility limit only applies to the primary emissions sources, and that other sources associated with the lead oxide production sources, such as building ventilation, would be ''other lead emitting operations'' subject to the 1.0 mg/dscm emission limit. We also agree with the comment that the lead oxide production process emissions limit was developed as a production-based limit because only one production-based data point was available when the NSPS was developed. However, a new limit was not proposed and the process-based emission standard accounts for variability with production rate and flow rate. It is difficult to establish an equivalent concentration-based limit, due to the variability in process conditions, such as production volume and flow rate, that must be considered on an individual unit basis. Therefore, as facilities are already familiar with how to comply with the production-based limit, we are retaining the current production-based limit.

b. Electronic Reporting

To increase the ease and efficiency of data submittal and data accessibility, the EPA is finalizing, as proposed, that owners and operators of lead acid battery manufacturing subject to the new NSPS at 40 CFR part 60, subpart KKa, submit electronic copies of required performance test reports and the semiannual excess emissions and continuous monitoring system performance and summary reports, through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). We did not receive any comments regarding these requirements. A description of the electronic data submission process is provided in the memorandum *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules,* available in the docket for this action. The final rule requires that performance test results collected using test methods that are supported by the EPA's Electronic Reporting Tool (ERT) as listed on the ERT website [3] at the time of the test be submitted in the format generated through the use of the ERT or an electronic file consistent with the xml schema on the ERT website and that other performance test results be submitted in portable document format using the attachment module in the ERT. For the semiannual excess emissions and continuous monitoring system performance and summary reports, the final rule requires that owners and operators use the appropriate spreadsheet template to submit information to CEDRI. The final version of the template for these reports will be located on the CEDRI website.[4]

Furthermore, the EPA is finalizing, as proposed, provisions that allow owners and operators the ability to seek extensions for submitting electronic reports for circumstances beyond the control of the facility, *i.e.,* for a possible outage in CDX or CEDRI or for a *force majeure* event, in the time just prior to a report's due date, as well as the process to assert such a claim.

[3] *https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert.*

[4] *https://www.epa.gov/electronic-reporting-air-emissions/cedri.*

B. NESHAP

For each issue, this section provides a description of what we proposed and what we are finalizing for the issue, the EPA's rationale for the final decisions and amendments, and a summary of key comments and responses. For all comments not discussed in this preamble, comment summaries and the EPA's responses can be found in the Comment Summary and Response Document available in the docket.

1. Technology Review for Grid Casting Facilities

As discussed in section III.A.1 above, the emission limit promulgated in the 1982 NSPS was 0.4 mg/dscm and the opacity standard finalized was 0 percent and these standards were based on an impingement scrubber (with an estimated 90 percent control efficiency). In the 2007 NESHAP final rule, the EPA adopted that same limit (0.4 mg/dscm based on impingent scrubbers) as the limit for grid casting in the NESHAP, and also adopted the 0 percent opacity standard. Based on our technology review, the majority of existing area source facilities (at least 29 of the 39 facilities subject to the NESHAP) use fabric filters. At the time of proposal, we were missing permits for three facilities; one in California, one in Indiana, and one in Tennessee, and did not have enough information for the other seven facilities. Some facilities are also using secondary control devices such as a wet scrubber or HEPA filter in addition to the primary fabric filters to achieve further emissions control. Furthermore, we did not identify any facilities using only a wet scrubber. Based on our review of permits and other information, we assumed all existing facilities use fabric filters to control their grid casting emissions. Therefore, we concluded that fabric filters are clearly feasible and well demonstrated as an appropriate control technology for grid casting operations. Based on our technology review pursuant to CAA section 112(d)(6), we proposed a lead emission limit of 0.04 mg/dscm that was thought to reflect the use of a fabric filter system with an estimated 99 percent efficiency.

We received one comment against the proposed amendment to the grid casting emission limit, which is summarized above in section III.A.1. The commenters did not comment on the EPA's assumption that no existing facilities are using only a wet scrubber to control grid casting emissions. Based on the comment regarding fabric filter efficiencies, we analyzed stack test data and calculated a UPL as described in section III.A.1 above. Based on this additional analysis, we are promulgating a revised lead emission limit of 0.08 mg/dscm for grid casting which reflects the use of a fabric filter to control emissions. Based on our technology review and information obtained since the proposal, we can now state that 36 of 39 facilities currently subject to the NESHAP use fabric filters to control their grid casting emissions. Although, we are missing three permits, since we did not receive comment on our assumption that all existing facilities use fabric filters for grid casting, we estimate that all existing sources are currently using fabric filters to control their grid casting emissions. Therefore, there will be no additional costs to existing sources to comply with the revised limit. We are retaining the 0 percent opacity standard for grid casting as proposed.

2. Technology Review for Lead Reclamation Facilities

We did not find any facilities currently conducting lead reclamation operations as they are defined in the NESHAP during our technology review. In the NESHAP, lead reclamation facilities are defined as facilities that remelt lead and reform it into ingots, and as discussed above in section III.A.2, we identified two facilities with lead reclamation equipment in their permit, and that equipment is controlled by fabric filters. Although, it is unclear from the permit if the two facilities are using this equipment to remelt lead and form it into ingots as the definition in the NESHAP specifies. We concluded in the technology review that fabric filters represented a development in technology since the 2007 NESHAP and therefore, we proposed to revise the lead emission limit of 4.5 mg/dscm (which was developed in 1980 based on a scrubber with estimated 90 percent efficiency and adopted by the NESHAP in 2007) to 0.45 mg/dscm (based on application of fabric filters) for lead reclamation operations at lead acid battery manufacturing facilities. We also proposed to retain the 5 percent opacity standard. The EPA received no comments on the proposed emission limit or opacity standard for lead reclamation process in this rulemaking. For these reasons, the EPA is promulgating a revised lead emission limit of 0.45 mg/dscm for the lead reclamation process in the NESHAP. We are also retaining the opacity standard of 5 percent and we retain that a facility must use EPA Method 9 to demonstrate compliance with the daily and weekly visible emission observations as well as during the performance tests required every 5 years as proposed.

As discussed above in section III.A.7.a, we are also finalizing, as proposed, to revise the definition of lead reclamation facility to clarify that the lead reclamation facility does not include recycling of any type of finished battery or recycling lead-bearing scrap that is obtained from non-category sources or from any offsite operations, and these activities are prohibited. We are also finalizing, as proposed, to clarify that lead reclamation facilities also do not include the remelting of lead metal scrap (such as unused grids or scraps from creating grids) from on-site lead acid battery manufacturing processes and that any such remelting is considered part of the process where the lead is remelted and used (*i.e.,* grid casting).

3. Technology Review for Paste Mixing Facilities

During the technology review, we identified 15 paste mixing facilities subject to the NESHAP (38 percent of the total) that currently have secondary filters to achieve much higher control efficiency on their paste mixing operations. As discussed in section III.A.3 above, the results of the cost analyses at proposal for existing large facilities indicated that the estimated cost effectiveness of adding a secondary HEPA filter on the paste mixing process was within the range of what the EPA has considered to be a cost-effective level of control for lead emissions, but it was not cost-effective for existing small facilities to add secondary HEPA filters to their paste mixing processes. Therefore, we proposed that large sources would need to comply with a revised paste mixing emission limit of 0.1 mg/dscm, and we proposed to retain the standard of 1 mg/dscm for small sources.

Based on the comments we received after proposal regarding the use of high efficiency filters, as discussed in section III.A.3 above, we have conducted further analysis for existing facilities, and we agree with the commenter that ePTFE (high efficiency) filters can be used to achieve the revised paste mixing emission limit of 0.1 mg/dscm. We estimate that 24 (out of 39 existing facilities that have paste mixing operations) can comply with the proposed 0.1 mg/dscm emission limit because they already use secondary HEPA filters or have stack tests/permit limits that indicate they could comply with the emission limit of 0.1 mg/dscm. Further, as the available information shows that paste mixing operations are already controlled by fabric filters at

most facilities, it is possible that instead of adding HEPA filters, most facilities could switch from traditional filter materials to more modern higher efficiency filter materials and achieve the same emissions levels as those achieved by a secondary filter at a lower cost. However, as a commenter noted, as discussed in section III.A.3, some facilities use wet scrubbers to control paste mixing emissions. We are aware of five existing facilities that use wet scrubbers to control their paste mixing operations. Three of these facilities currently have secondary HEPA filters following their scrubbers. Based on the data available to the EPA at the time of this rulemaking, four of the five facilities using scrubbers to control paste mixing operations can comply with the revised emission limit of 0.1 mg/dscm. One of these five facilities has three wet scrubbers to control paste mixing. Based on stack test data we obtained from the state agency, we estimate that this facility might need to add a secondary HEPA filter on one of these devices, which will result in slightly higher costs for this one facility. We conservatively estimate that the remaining 14 facilities will need to upgrade their bags to comply with the revised emission limit. The incremental initial costs to replace current bags at these facilities with the high efficiency PTFE bags ranges from $6,000 to $36,000 per facility, and the incremental annualized costs range from $3,000 to $18,000 per facility per year. We estimate that a typical large facility would have annual costs of about $30,000 per year and achieve about 0.1 tpy reduction of lead emissions with estimated cost effectiveness of $300,000 per ton and that a typical small facility would have annual costs of about $18,000 per year and achieve about 0.03 tpy reduction of lead emissions, with estimated cost effectiveness of $300,000 per ton, which is well within the range of cost effectiveness that the EPA has historically accepted. Therefore, we conclude that for most facilities, this limit of 0.1 mg/dscm is cost-effective.

However, based on available information, for at least one very small facility with already very low paste mixing emissions, replacing current bags with ePTFE bags would not be cost-effective. We estimate that to meet the 0.1 mg/dscm lead emission limit, its initial costs would be $18,000 and its incremental annualized costs would be $9,000, and would achieve a 0.002 tpy lead reduction with estimated cost effectiveness of $4.7M/ton. This estimated cost effectiveness (for a very small facility with very low emissions) of $4.7M/ton is higher than what the EPA has historically accepted as cost-effective. Therefore, because we estimate it is cost-effective for all other existing facilities except for one, in order to ensure that emission reductions can be achieved in a cost-effective manner for the source category, we are also promulgating an alternative lead emission limit of 0.002 lb/hour as described in section III.A.3. This alternative emission limit of 0.002 lbs/hr is more stringent than the 0.1 mg/dscm for most facilities, and is significantly more stringent than the proposed emission limit of 1 mg/dscm for very small facilities with very low flow rates and will ensure emissions are limited to low levels in the future. With the alternative lead limit, we estimate that one of 14 facilities noted above would be able to comply with the alternative limit with no additional control costs. Therefore, we estimate that with the revised limit of 0.1 mg/dscm along with the option to comply with the alternative limit (0.002 lbs/hr) that 13 existing facilities could be affected by these rule requirements and that total estimated costs to the source category are estimated to be $384,000 in incremental initial costs and $96,000 incremental annual costs. We estimate a total lead reduction for the source category of 0.64 tpy. More details on the costs are available in the Costs Impacts Memorandum, in the docket for this rulemaking.

Based on this analysis, for new and existing sources under the NESHAP, we are promulgating the revised emission limit of 0.1 mg/dscm, which we conclude reflects developments in technology under section 112(d)(6) for most facilities and the alternative lead emission limit of 0.002 lbs/hr, which we conclude reflects developments under section 112(d)(6) for very small facilities with fabric filter systems with very low flow rates, applicable to all facilities regardless of production capacity. We are also retaining the opacity limit of 0 percent but are promulgating an option to use EPA Method 22 to demonstrate compliance with the daily and/or weekly visible emissions as discussed above in section III.A.6.c.

4. Technology Review for Fugitive Dust Emissions

The same requirements proposed for 40 CFR part 60, subpart KKa, as described in section III.A.4 above, were proposed as amendments to the NESHAP. During the technology review, we discovered that several facilities currently subject to the NESHAP already had requirements to reduce fugitive dust emissions through similar work practices in their operating permits including in the lead oxide unloading and storage areas. Other rules, including the NESHAPs for primary lead smelting and secondary lead smelting, have required new and existing sources to minimize fugitive dust emissions at the facilities, such as through the paving of roadways, cleaning roadways, storing lead bearing materials in enclosed spaces or containers, and other measures.

As discussed under section III.A.4, we received three comments regarding the proposed fugitive dust minimization work practices. In consideration of these comments and after additional research, described in section III.A.4 above, under the NESHAP, we are finalizing the same requirements as discussed in section III.A.4 above for 40 CFR part 60, subpart KKa. As a change to the proposal, we are promulgating a requirement that existing sources must develop and implement a fugitive dust minimization plan for the lead oxide unloading and storage area, which represents GACT. Based on the comments, we revised our cost estimates and estimate that the cost burden will be mostly labor to develop and implement the dust plan, and that most facilities would already own the equipment necessary, such as a HEPA vacuum, to carry out these work practices. Total estimated costs range from $0 (for facilities that already have a fugitive dust plan and are implementing it) to $22,000 per facility per year. As discussed under section III.A.4, we have not quantified emission reductions as a result of implementing the work practices. It is difficult to quantify fugitive dust emissions since they are not released through a point, such as a stack, and cannot easily be measured. Therefore, for the reason discussed in section III.A.4, we have determined these costs are reasonable and are finalizing work practices to minimize fugitive dust in the lead oxide unloading and storage areas. The costs are discussed in more detail in the Cost Impacts Memorandum, available in the docket for this rulemaking.

5. Expanded Facility Applicability

The original definition of the lead acid battery manufacturing source category stated that lead acid battery manufacturing facilities include any facility engaged in producing lead acid batteries and explained that the category includes, but is not limited to, facilities engaged in the manufacturing steps of lead oxide production, grid casting, paste mixing, and three-process operations (plate stacking, burning, and assembly). The EPA is aware of some facilities that conduct one or more of

these lead acid battery manufacturing processes but do not produce the final product of a battery. Thus, these facilities were not previously considered to be in the lead acid battery source category, and those processes were not subject to the lead acid battery NESHAP. To ensure these processes that are producing certain battery parts or input materials (such as grids or lead oxide) are regulated to the same extent as those that are located at facilities where the final battery products are produced, the EPA proposed to revise the applicability provisions in the NESHAP such that facilities that process lead to manufacture battery parts or input material would be subject to the NESHAP even if they do not produce batteries. Information from the technology review indicates that lead emissions from the processes at such facilities are controlled and can meet the emissions limits in the Lead Acid Battery Manufacturing Area Source NESHAP. However, the facilities would also need to comply with the compliance assurance measures and work practices of the proposed NESHAP, including the proposed fugitive dust mitigation plan requirements, improved monitoring of emission points with fabric filters, performance testing, reporting, and recordkeeping. We estimated the costs for compliance testing would be $23,000 to $34,000 per facility once every 5 years; and annual costs for the fugitive dust work practices would be $0 to $13,000 per facility.

We received two comments on this proposed action. Hammond Group, a lead oxide manufacturer, and BCI commented that the EPA did not consider that some of these facilities could be subject to other NESHAP. BCI also commented that this amendment would bring in ''*de minimus*'' sources such as those that manufacturer cable and wires not necessarily used for lead acid batteries. A summary of these comments and the Agency's response is found in the Comment Summary and Response Document, available in the docket for this action.

The EPA's intent with the proposed applicability amendment was to ensure that facilities involved in the primary lead acid battery manufacturing processes (grid casting, paste mixing, lead oxide manufacturing and three-process operations) but that do not make the end-product of a lead acid battery are subject to Federal regulations that limit their lead emissions. After consideration of the comments, we are finalizing the applicability provisions such that battery component facilities that are involved in the primary processes (grid casting, paste mixing, lead oxide manufacturing and three-process operations) and manufacturing battery parts or input material (*i.e.,* grids and lead oxide) used in the manufacturing of lead acid batteries will be subject to the NESHAP. However, we are also finalizing a provision that if a facility is already subject to another NESHAP that controls relevant lead emissions, it is exempt from complying with the Lead Acid Battery Manufacturing Area Source NESHAP, 40 CFR part 63, subpart PPPPPP.

After proposal, we became aware that the existing Clarios facilities in Florence, Kentucky and West Union, South Carolina do not make battery grids or any lead-bearing battery parts. These facilities are involved in making the plastic battery cases. Therefore, we have removed them from our facilities list. There are four facilities that we are aware of (and included in the proposal analysis) that will become subject to 40 CFR part 63, subpart PPPPPP, due to this applicability expansion: a battery grid producing facility, Clarios in Red Oak, Iowa; and three lead oxide manufacturers, Doe Run Fabricated Metals in Vancouver, Washington; and Powerlab, Inc. in Terrell, Texas, and Savanna, Illinois. The estimated costs for these facilities to comply with the Lead Acid Battery Manufacturing Area Source NESHAP range between $23,000 and $47,000 per facility once every 5 years for performance testing, and between $20,000 and $24,000 per year for all other requirements above what these facilities are already doing to comply with their state regulations.

6. Testing and Monitoring Requirements

a. Performance Tests

We proposed a requirement to conduct performance testing at least once every 5 years for all existing and new area sources. To reduce some of the cost burden, the EPA proposed to allow facilities that have two or more processes and stacks that are very similar, and have the same type of control devices, to test just one stack as representative of the others as approved by the delegated authority. We proposed that the NESHAP would include the same testing requirements that the EPA proposed under the new NSPS, as discussed above in section III.A.6.a. As explained in the proposed rule, the EPA has been adding requirements to NESHAP when other amendments are being made to the rules to include periodic performance tests to help ensure continuous compliance.

As explained in section III.A.6.a., we received comments on testing from three stakeholders. More details regarding these comments, and the EPA's responses are provided in the Comment Summary and Response Document, available in the docket for this rulemaking.

We are promulgating the performance testing requirements as proposed. Costs for existing facilities are estimated to range from $23,000 to $181,000 per facility every 5 years, depending on the total number of stacks to be tested. We conclude performance testing costs are reasonable and necessary to ensure the emission standards in 40 CFR part 63, subpart PPPPPP, are continuously met and enforceable.

b. Improved Monitoring of Emission Points Controlled by Fabric Filters and Scrubbers

The 2007 area source NESHAP required facilities to conduct semiannual inspections and maintenance for emission points controlled by a fabric filter to ensure proper performance of the fabric filter. In addition, pressure drop or visible emission observations had to be conducted for the fabric filter daily (or weekly if the fabric filter has a secondary HEPA filter) to ensure the fabric filter was functioning properly. To reduce the likelihood of malfunctions that result in excess lead emissions, the EPA proposed to increase the frequency of fabric filter inspections and maintenance operations to monthly for units that do not have a secondary filter and retain the requirement for semi-annual inspections for units that do have a secondary filter. After consideration of the public comments, summarized in the Comment Summary and Response Document available in the docket for this action, we are finalizing quarterly inspections for all fabric filter systems (both primary and secondary). The estimated costs for the additional inspections range from $0 (for facilities already doing at least quarterly inspections) to $6,300 per facility per year which we have determined is reasonable.

As discussed above in section III.A.6.b., standard monitoring of scrubbing systems includes measuring liquid flow rate across the scrubbing system. We proposed to add a requirement to measure and record the liquid flow rate across each scrubbing system (that is not followed by a fabric filter) at least once every 15 minutes in the NESHAP, in addition to monitoring pressure drop across each scrubbing system.

We received no comments on this issue, and therefore we are finalizing a requirement to measure and record the

liquid flow rate across each scrubbing system that is not followed by a fabric filter at least once every 15 minutes. Based on our review, we only identified three facilities that have a scrubber system that is not followed by a fabric filter, and at least one of these facilities already has this requirement in their permit. We expect the other two facilities likely already have the capability to measure liquid flow rate since it is a standard requirement to ensure a scrubbing system is operating properly. Therefore, we estimate these facilities will not have any capital costs to comply with this requirement but may have a small unquantified increase in annual costs due to recordkeeping requirements.

c. Bag Leak Detection Systems

As discussed above in section III.A.6.c, the EPA found several lead acid battery manufacturing facilities that have bag leak detection systems during the technology review, and we proposed the use of bag leak detection systems for new and existing large lead acid battery manufacturing facilities as a development in operational procedures that would assure compliance with the area source NESHAP by identifying and correcting fabric filter failures. Taking the comments we received into consideration as well as the substantial costs to the industry for this requirement, we are not requiring existing facilities to install and operate bag leak detection systems. However, we are promulgating bag leak detection as an option and are finalizing operating limits and monitoring parameters for bag leak detection systems if they are used at a facility. The same operating limits and monitoring parameters that were proposed are being finalized. The rationale for this decision is the same as described above in section III.A.6.c.

Considering comments received on the proposed provisions for fabric filter monitoring and inspections, and to reduce the likelihood of malfunctions that result in excess lead emissions, we are also finalizing an increase in fabric filter monitoring requirements (*i.e.,* pressure drop and visible emissions readings) from once per day to twice per day for fabric filters without a secondary filter. Specifically, we are promulgating a requirement that for fabric filters without a secondary filter, facility operators must do one of the following measurements daily if the results of the most recent performance test is greater than 50 percent of the applicable lead emission limit: (1) record pressure drop two times per day with a minimum of 8 hours between the recordings; or (2) conduct visible emission observations two times per day with a minimum of 6 hours between observations. For fabric filters without a secondary filter that have performance test results less than 50 percent of the applicable emissions limit, we are retaining the requirement that facilities must do one of the following: (1) record pressure drop at least one time per day; or (2) conduct visible emission observations at least one time per day. We are also retaining as proposed the requirement for fabric filter systems with a secondary filter to record pressure drop weekly or conduct weekly visible emission observations.

The estimated cost of the additional recording varies depending on whether or not a facility has the capability for automated data recordings or if they do manual recordings. The estimated cost ranges from approximately $8,000 to $80,000 per year per facility for manual data recording, and an estimated $200 to update software for automated data recording. For smaller facilities with multiple fabric filter baghouses that may record the pressure drop reading by hand, this requirement could be burdensome in addition to the other new requirements in the amended rules. To offset the potential additional costs for additional visible emission recordings, we are also promulgating an amendment to the method for conducting visible emission observations for fabric filters. The 2007 NESHAP required that EPA Method 9 be used for the daily and/or weekly visible emission observations. EPA Method 9 is a test that quantifies opacity, while EPA Method 22 is a qualitative test to determine the absence of visual emissions (*i.e.,* 0 percent opacity). We are revising the regulations to allow for the use of EPA Method 22 as an alternative to EPA Method 9 for the daily and weekly visible emission observations of the processes with 0 percent opacity standards. We are retaining the opacity standards in the rule of 0 percent for grid casting, paste mixing, three-process operations, lead oxide manufacturing and other lead emitting operations and we are retaining the opacity standard of 5 percent for lead reclamation. Because we have retained the opacity standards of 0 percent for the applicable processes in the final rule, EPA Method 22, in the case of lead acid battery manufacturing processes, will be sufficient to demonstrate compliance with the 0 percent opacity standard during the daily/weekly visible emissions observations. EPA Method 9 must still be used for daily and/or weekly visible emission observations for the lead reclamation process if a facility conducts these operations, and EPA Method 9 must still be used to determine compliance with the opacity standards in the rule during performance tests.

We estimate that there are 19 facilities that may be required to record pressure drop twice a day or record observations of visible emissions twice a day. For facilities that record pressure drop daily to comply with the NESHAP, we estimate that the total cost to the industry for one additional pressure drop recording is approximately $71,000 per year with facility costs ranging from $0 to $12,100 per year, which we conclude is reasonable. The costs and assumptions are discussed in more detail in the Cost Impacts Memorandum available in the docket.

For facilities that conduct visible emission observations daily to comply with the NESHAP, we have estimated costs for one additional observation and recording of each fabric filter system with no secondary filter or bag leak detection system. We estimate that providing EPA Method 22 as an option for the daily and/or weekly visible emission observations, as discussed above, will be a cost savings for facilities. It is estimated that the net costs for an additional visible emission observation and recording using EPA Method 22 are $95,300 for the entire industry and an average net cost of $2,400 per year per facility, which we conclude is reasonable. The costs and assumptions are discussed in more detail in the Cost Impacts Memorandum available in the docket.

7. Other Actions

a. Lead Oxide Manufacturing Emission Limit

As discussed above in section III.A.7.a, we proposed to retain the lead oxide manufacturing emission limit. Based on public comments (described above) we are finalizing a clarification that this emission limit applies to the primary emissions sources and their emission control devices (*i.e.,* lead oxide production fabric filter baghouses), and that other sources associated with the lead oxide production source, such as building ventilation, would be ''other lead-emitting operations'' subject to the 1.0 mg/dscm emission limit.

b. Electronic Reporting Requirements

The EPA is finalizing, as proposed, that owners and operators of lead acid battery manufacturing facilities subject to the NESHAP at 40 CFR part 63, subpart PPPPPP, submit electronic copies of required performance test

reports and the semiannual excess emissions and continuous monitoring system performance and summary reports, through the EPA's CDX using the CEDRI. A description of the electronic data submission process is provided in the memorandum *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules,* available in the docket for this action. The final rule requires that performance test results collected using test methods that are supported by the EPA's Electronic Reporting Tool (ERT) is listed on the ERT website [5] at the time of the test be submitted in the format generated through the use of the ERT or an electronic file consistent with the xml schema on the ERT website and other performance test results be submitted in portable document format (PDF) using the attachment module in the ERT. For semiannual excess emissions and continuous monitoring system performance and summary reports, the final rule requires that owners and operators use the appropriate spreadsheet template to submit information to CEDRI. The final version of the template for these reports will be located on the CEDRI website.[6]

8. Startup, Shutdown, and Malfunction Requirement

We have eliminated the SSM exemption in this rule. Consistent with *Sierra Club* v. *EPA,* 551 F. 3d 1019 (D.C. Cir. 2008), the EPA has established standards in this rule that apply at all times. We have also revised Table 3 (the General Provisions Applicability Table) in several respects as is explained in more detail below. For example, we have eliminated the incorporation of the General Provisions' requirement that the source develops an SSM plan. We have also eliminated and revised certain recordkeeping and reporting that is related to the SSM exemption as described in detail in the proposed rule and summarized again here.

In establishing the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not established alternate standards for those periods.

We discussed this issue with industry representatives and asked them if they expect any problems with the removal of the SSM exemptions. The lead acid battery manufacturing industry did not identify (and there are no data indicating) any specific problems with removing the SSM provisions. The main control devices used in this industry are fabric filters. We expect that these control devices are effective in controlling emissions during startup and shutdown events.

Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead, they are by definition, sudden, infrequent, and not reasonably preventable failures of emissions control, process, or monitoring equipment. (40 CFR 63.2) (Definition of malfunction). The EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards. This reading has been upheld as reasonable by the court in *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 606–610 (2016).

As noted in the proposal for the amendments to the Lead Acid Battery Manufacturing Area Source NESHAP, under this decision, the court vacated two provisions that exempted sources from the requirement to comply with otherwise applicable CAA section 112(d) emission standards during periods of SSM. We proposed and are finalizing revisions to the NESHAP at 40 CFR 63.11421 through 63.11427 that remove the SSM exemption under the Lead Acid Battery Manufacturing Area Source NESHAP and any references to SSM-related requirements.

C. What are the effective and compliance dates of the standards?

1. NSPS

Pursuant to CAA section 111(b)(1)(B), the effective date of the final rule requirements in 40 CFR part 60, subpart KKa, will be the promulgation date. Affected sources that commence construction, or reconstruction, or modification after February 23, 2022, must comply with all requirements of 40 CFR part 60, subpart KKa, no later than the effective date of the final rule or upon startup, whichever is later.

2. NESHAP

Pursuant to CAA section 112(d)(10) the effective date of the final rule requirements in 40 CFR part 63, subpart PPPPPP, is the promulgation date.

For existing affected lead acid battery manufacturing facilities (*i.e.,* facilities that commenced construction or reconstruction on or before February 23, 2022), there are specific compliance dates for each amended standard, as specified below. For the removal of the SSM exemptions, we are finalizing that facilities must comply by the effective date of the final rule. For the following final revisions, we are promulgating a compliance date of no later than 180 days after the effective date of the final rule: Clarifications to the definition of lead reclamation; requirements for electronic reporting of performance test results and semiannual excess emissions and continuous monitoring system performance and summary reports; increased fabric filter inspection frequency; additional pressure drop recording; revisions to the applicability provisions to include battery production processes at facilities that do not produce the final end product (*i.e.,* batteries); and bag leak detection provisions.

For the removal of the SSM exemptions, we proposed a compliance date of no later than 180 days after the effective date of the final rule, including for the proposed changes to the NESHAP being made to ensure that the regulations are consistent with the decision in *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008) in which the court vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of hazardous air pollutants during periods of SSM. Specifically, the court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and (h)(1). The EPA removed these SSM exemptions from the CFR in March 2021 to reflect the court's decision (86 FR 13819). In this action, we are changing the cross-reference to those General Provisions for the applicability of these two requirements from a ''yes'' to ''no'' and adding rule-specific language at 40 CFR 63.11423(a)(3) to ensure the rule applies as all times, and 40 CFR 63.11423(a)(3) will be effective upon promulgation of this action. In addition, we do not expect additional time is necessary generally for facilities to comply with changes to SSM provisions because we have concluded that the sources can meet the otherwise applicable standards that are in effect at all times, as described in section III.B.7. We are therefore finalizing that facilities must comply with this requirement no later than the effective date of this final rule, with the exception of recordkeeping provisions. For recordkeeping under the SSM provisions, we are finalizing that facilities must comply with this requirement 90 days after the effective date of the final rule. Recordkeeping provisions associated with malfunction events (40 CFR 63.11424(a)(7)(ii) and (iii)) shall be effective no later than 90

[5] *https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert.*

[6] *https://www.epa.gov/electronic-reporting-air-emissions/cedri.*

days after the effective date of this action. The EPA is requiring additional information under 40 CFR 63.11424 for recordkeeping of malfunction events, so the additional time is necessary to permit sources to read and understand the new requirements and adjust record keeping systems to comply. Reporting provisions are in accordance with the reporting requirements during normal operations and the semi-annual report of excess emissions.

For the following final revisions, we are finalizing a compliance date of 3 years after the publication date of the final rule: Revised emission limits for paste mixing, grid casting, and lead reclamation; requirements to develop and follow a fugitive dust mitigation plan; and requirements that performance testing be conducted at least once every 5 years.

After the effective date of the final rule and until the applicable compliance date of the amended standards, affected existing lead acid battery manufacturing facilities must comply with either the current requirements of 40 CFR part 63, subpart PPPPPP, or the amended standards.

For existing affected lead acid battery component manufacturing facilities that become subject to 40 CFR part 63, subpart PPPPPP, the compliance date for all applicable requirements is 3 years after the publication date of the final rule. Newly affected lead acid battery manufacturing facilities and newly affected lead acid battery component manufacturing facilities (*i.e.,* facilities that commence construction or reconstruction after February 23, 2022) must comply with all requirements of 40 CFR part 63, subpart PPPPPP, including the final amendments, by the effective date of the final rule, or upon startup, whichever is later.

IV. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected facilities?

1. NSPS

The EPA has found through the BSER review for this source category that there are 40 existing lead acid battery manufacturing facilities subject to the NSPS for Lead-Acid Battery Manufacturing Plants at 40 CFR part 60, subpart KK. We are not currently aware of any planned or potential new lead acid battery manufacturing facilities, but it is possible that some existing facilities could be modified or reconstructed in the future. At this time, and over the next 3 years, the EPA anticipates that no facilities will become subject to the new NSPS for Lead Acid Battery Manufacturing Plant at 40 CFR part 60, subpart KKa.

2. NESHAP

Through the technology review for the source category, the EPA found that there are 39 existing facilities subject to the NESHAP for Lead Acid Battery Manufacturing Area Sources at 40 CFR part 63, subpart PPPPPP. These facilities will be affected by the amendments to the NESHAP and four additional facilities will become subject to the NESHAP upon promulgation of the amendments.

B. What are the air quality impacts?

1. NSPS

We are not expecting any new facilities to be built in the foreseeable future, but if any new facilities are built or any existing facility is modified or reconstructed in the future, the requirements in the new NSPS, 40 CFR part 60, subpart KKa, would achieve an estimated 0.03 tpy to 0.1 tpy reduction of allowable lead emissions for each new facility from the source category compared to that of the current NSPS 40 CFR part 60, subpart KK. We are also promulgating additional compliance assurance measures and work practices to minimize fugitive dust emissions, which will reduce the likelihood of excess emissions of lead. The reductions of lead from these compliance assurance measures are unquantified.

2. NESHAP

The revised lead emission standard for paste mixing operations will achieve an estimated 0.6 tpy reduction of lead emissions. The revised lead emission standards for grid casting and lead reclamation facilities are not expected to result in additional lead emission reductions, as it is estimated that all facilities in the source category are already meeting the revised emissions limits. However, the new standards will reduce the allowable emissions from those sources and ensure that the emissions remain controlled and minimized moving forward. In addition, the Agency is finalizing work practices to minimize fugitive lead dust emissions and expects these will achieve some unquantified lead emission reductions. We are also finalizing several compliance assurance requirements which will help ensure continuous compliance with the NESHAP and help prevent noncompliant emissions of lead. The final amendments also include removal of the SSM exemptions. While we are unable to quantify the emissions that occur during periods of SSM or the specific emissions reductions that would occur due to this action, eliminating the SSM exemption has the potential to reduce emissions by requiring facilities to meet the applicable standard during SSM periods.

C. What are the cost impacts?

1. NSPS

The costs for a new, reconstructed, or modified affected facility to comply with the final regulatory requirements discussed above are described in detail in section III.A and are summarized below. As mentioned previously in this action, we do not expect any brand-new affected facilities in the foreseeable future. However, we do expect that some existing facilities could undergo modifications or reconstruction, and these facilities would incur the costs summarized below.

Revised Emission Limit for Grid Casting: Estimated incremental capital costs for a new, reconstructed, or modified source to install and operate a fabric filter (BSER) compared to an impingement scrubber (baseline) on grid casting operations are $230,500, with estimated incremental annual costs of $52,000 for a small facility, and are $374,000, with estimated incremental annual costs of $88,000 for a large facility.

Revised Emission Limit for Lead Reclamation: Estimated incremental capital costs for a new, reconstructed, or modified source to install and operate a fabric filter (BSER) compared to an impingement scrubber (baseline) on lead reclamation operations are $17,000 for both small and large facilities, with estimated incremental annual costs of $8,500 for small facilities and $13,000 for large facilities.

Revised Emission Limit for Paste Mixing Operations: Estimated incremental capital costs for a new, reconstructed, or modified source to meet the revised emission limit through the use of higher efficiency bags (BSER) or inclusion of secondary filters (BSER) in the facility design compared to only including traditional primary fabric filters (baseline) are $18,000, with estimated incremental annual costs of $9,000 for a small facility, and are $60,000 capital, with estimated incremental annual costs of $30,000 for a large facility.

Work Practices to Minimize Fugitive Lead Dust: Estimated incremental costs for a new, reconstructed, or modified source to develop and implement a fugitive dust minimization plan (BSER) compared to no fugitive dust minimization requirements (baseline) is $7,900 in initial costs to develop the

plan, with estimated annual costs to implement the plan of approximately $14,000 per facility.

Bag Leak Detection Requirements: Estimated incremental capital costs for a new facility to install and operate bag leak detection systems on emissions control systems that do not have secondary filters (BSER) compared to no bag leak detection requirements (baseline) are $802,000, with estimated incremental annual costs of $161,000 per facility.

Performance Testing Requirements: Estimated incremental costs for a new, reconstructed, or modified source to meet the revised testing frequency of once every 5 years (BSER) compared to only once for initial compliance (baseline) are $23,000 for the first stack and $5,500 for each additional stack tested at a facility during the same testing event. The costs per facility are estimated to be $0 to $181,000 once every 5 years, or an annual average cost of $0 to $36,000, depending on number of stacks and the current frequency of testing.

Fabric Filter Inspection Requirements: Estimated incremental costs for a new, reconstructed, or modified source to meet the revised fabric filter inspection frequency of once per quarter (BSER) compared to once every 6 months (baseline) are $6,300 annually per facility.

The total estimated incremental capital costs per new facility are approximately $898,000 for a small facility and $973,000 for a large facility, with estimated incremental annual costs of $251,000 per small facility and $300,000 per large facility. The total estimated incremental capital costs per modified or reconstructed facility (which would not have bag leak detection requirements) are approximately $96,000 for a small facility and $171,000 for a large facility, with estimated incremental annual costs of $90,000 per small facility and $140,000 per large facility.

2. NESHAP

The estimated costs for an affected source to comply with the amended NESHAP are the same as the costs described above (in section IV.C.1) for modified or reconstructed facilities under the NSPS, 40 CFR part 60, subpart KKa. Costs for performance testing are estimated to be $0 to $180,000 per facility once every 5 years depending on number of stacks (equates to an average annual cost of about $0 to $36,000 per facility). Total costs for all other amendments for the entire source category (43 facilities) are an estimated $740,000 capital costs and annual costs of $570,000 (equates to an average cost per facility of $17,000 capital and $13,000 annualized). More detailed information on cost impacts on existing sources is available in the Cost Impacts Memorandum available in the docket for this action.

D. What are the economic impacts?

The EPA conducted economic impact analyses for these final rules, as detailed in the memorandum *Economic Impact and Small Business Analysis for the Lead Acid Battery Manufacturing NSPS Review and NESHAP Area Source Technology Review: Final Report,* which is available in the docket for this action. The economic impacts of the final rules are calculated as the percentage of total annualized costs incurred by affected ultimate parent owners to their revenues. This ratio provides a measure of the direct economic impact to ultimate parent owners of facilities while presuming no impact on consumers. We estimate that none of the ultimate parent owners affected by these final rules will incur total annualized costs of 0.7 percent or greater of their revenues. Thus, these economic impacts are low for affected companies and the industries impacted by these final rules, and there will not be substantial impacts on the markets for affected products. The costs of the final rules are not expected to result in a significant market impact, regardless of whether they are passed on to the purchaser or absorbed by the firms.

E. What are the benefits?

1. NSPS

The new standards for grid casting, lead reclamation and paste mixing will reduce the allowable emissions of lead from new, reconstructed, or modified sources and ensure emissions remain controlled and minimized moving forward.

2. NESHAP

As described above, the final amendments are expected to result in a reduction of lead emissions of 0.6 tpy for the industry. We are also finalizing several compliance assurance requirements which help prevent noncompliant emissions of lead, and the final amendments also revise the standards such that they apply at all times, which includes SSM periods. In addition, the final requirements to submit reports and test results electronically will improve monitoring, compliance, and implementation of the rule. While we did not perform a quantitative analysis of the health impacts expected due to the final rule amendments, we qualitatively characterize the health impacts in the memorandum *Economic Impact and Small Business Analysis for the Lead Acid Battery Manufacturing NSPS Review and NESHAP Area Source Technology Review: Final Report,* which is available in the docket for this action.

F. What analysis of environmental justice did we conduct?

Consistent with the EPA's commitment to integrating EJ in the Agency's actions, and following the directives set forth in multiple Executive orders, the Agency has conducted an analysis of the demographic groups living near existing facilities in the lead acid battery manufacturing source category. For the new NSPS, we are not aware of any future new, modified, or reconstructed facilities that will be become subject to the NSPS in the foreseeable future. For the NESHAP, we anticipate a total of 43 facilities to be affected by this rule. For the demographic proximity analysis, we analyzed populations living near existing facilities to serve as a proxy of potential populations living near future facilities that may be impacted by the NSPS. We have also updated the analysis conducted at proposal by including one additional existing facility. The results of this addition do not change the findings that some communities around existing sources are above the national average in the demographic categories of Hispanic/Latino, linguistically isolated, and 25 years of age and over without a high school diploma. Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms; specifically, minority populations (*i.e.,* people of color), low-income populations, and indigenous peoples (59 FR 7629; February 16, 1994). Additionally, Executive Order 13985 is intended to advance racial equity and support underserved communities through Federal government actions (86 FR 7009; January 20, 2021). The EPA defines EJ as ''the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.'' The EPA further defines the term fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and

commercial operations or programs and policies.'' In recognizing that people of color and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution.

This action finalizes the NSPS for new, modified, and reconstructed sources that commence construction after February 23, 2022, and the NESHAP for existing and new sources. Since the locations of the construction of any new lead acid battery manufacturing facilities are not known, and it is not known which of the existing facilities will be modified or reconstructed in the future, the demographic analysis was conducted for existing facilities as a characterization of the demographics in areas where these facilities are located. The demographic analysis includes an assessment of individual demographic groups of the populations living within 5 km and within 50 km of the facilities. We then compared the data from the analysis to the national average for each of the demographic groups.

1. NSPS

For the NSPS, we have updated the analysis presented in the proposed rulemaking to include one additional existing source. However, the conclusions presented at proposal and in this final rule remain the same. For the NESHAP, we have updated the analysis presented in the proposed rulemaking to include this additional existing facility and three other facilities that will become subject to the NESHAP upon promulgation of the amendments to the rule.

The results of the demographics analysis for the NSPS (see Table 1) indicate that for populations within 5 km of the 40 existing facilities, the percent of the population that is Hispanic/Latino is above the national average (43 percent versus 19 percent) and the percent of people living in linguistic isolation is above the national average (9 percent versus 5 percent). The category average for these populations is primarily driven by five facilities with Hispanic/Latino populations within 5 km that were at least 3 times the national average. The percent of the population over 25 without a high school diploma is above the national average (19 percent versus 12 percent). While on average across all 40 facilities, the African American population living within 5 km is below the national average (10 percent versus 12 percent), four facilities did have African American populations within 5 km that were at least three times the national average.

The results of the demographic analysis (see Table 1) indicate that for populations within 50 km of the 40 existing facilities, the average percentages for most demographic groups are closer to the national averages. However, the average percent of the population that is Hispanic/Latino (25 percent) and in linguistic isolation (7 percent) are still above the national averages (19 percent and 5 percent, respectively). In addition, the average percent of the population within 50 km of the facilities that is Other/Multiracial is above the national average (11 percent versus 8 percent). The percent of the population over 25 without a high school diploma is above the national average (14 percent versus 12 percent).

TABLE 1—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS FOR LEAD ACID BATTERY MANUFACTURING NSPS FACILITIES

Demographic group	Nationwide	Population within 50 km of 40 existing facilities	Population within 5 km of 40 existing facilities
Total Population	328,016,242	47,911,142	2,245,359
	Race and Ethnicity by Percent		
White	60	52	37
African American	12	12	10
Native American	0.7	0.3	0.2
Hispanic or Latino (includes white and nonwhite)	19	25	43
Other and Multiracial	8	11	9
	Income by Percent		
Below Poverty Level	13	12	14
Above Poverty Level	87	88	86
	Education by Percent		
Over 25 and without a High School Diploma	12	14	19
Over 25 and with a High School Diploma	88	86	81
	Linguistically Isolated by Percent		
Linguistically Isolated	5	7	9

Notes:

• The nationwide population count and all demographic percentages are based on the Census' 2015–2019 American Community Survey 5-year block group averages and include Puerto Rico. Demographic percentages based on different averages may differ. The total population counts within 5 km and 50 km of all facilities are based on the 2010 Decennial Census block populations.

• To avoid double counting, the ''Hispanic or Latino'' category is treated as a distinct demographic category for these analyses. A person is identified as one of five racial/ethnic categories above: White, African American, Native American, Other and Multiracial, or Hispanic/Latino. A person who identifies as Hispanic or Latino is counted as Hispanic/Latino for this analysis, regardless of what race this person may have also identified as in the Census.

The EPA expects that the Lead Acid Battery Manufacturing NSPS and NESHAP will ensure compliance via their requirements for performance testing, inspections, monitoring, recordkeeping, and reporting and by complying with the standards at all times (including periods of SSM). The rule will also increase data transparency through electronic reporting. Therefore, effects of emissions on populations in proximity to any future affected sources, including in communities potentially overburdened by pollution, which are often people of color, low-income and indigenous communities, will be minimized at future new, modified, and reconstructed facilities through implementation of controls, work practices, and compliance assurance measures discussed in section III.A of this preamble to meet the NSPS.

The methodology and the results of the demographic analysis are presented in a technical report, *Analysis of Demographic Factors for Populations Living Near Lead Acid Battery Manufacturing Facilities,* available in the docket for this action (Docket ID No. EPA–HQ–OAR–2021–0619).

2. NESHAP

For the NESHAP, we updated the analysis conducted at proposal by analyzing four additional facilities that will be subject to the rule (from 39 to 43 facilities total). The results of the demographics analysis for the NESHAP (see Table 2) indicate that for populations within 5 km of the 43 facilities subject to the NESHAP, the percent of the population that is Hispanic/Latino is above the national average (43 percent versus 19 percent) and the percent of people living in linguistic isolation is above the national average (9 percent versus 5 percent). The category average for these populations is primarily driven by five facilities that had percent Hispanic/Latino populations within 5 km that were at least 3 times the national average. The percent of the population over 25 years of age without a high school diploma is above the national average (18 percent versus 12 percent). Although the category average population within 5 km was below the national average for African American populations (10 percent versus 12 percent), four facilities did have African American populations within 5 km that were at least 3 times the national average.

The results of the demographic analysis (see Table 2) indicate that for populations within 50 km of the 43 facilities subject to the NESHAP, the category average percentages for most demographic groups are closer to the national averages. However, the average percent of the population that is Hispanic/Latino (25 percent) and in linguistic isolation (7 percent) are still above the national averages (19 percent and 5 percent, respectively). In addition, the average percent of the population within 50 km of the facilities that is Other/Multiracial is above the national average (11 percent versus 8 percent). The percent of the population over 25 without a high school diploma is above the national average (14 percent versus 12 percent).

The EPA expects that the Lead Acid Battery Manufacturing Area Source NESHAP will result in HAP emissions reductions at 14 of the 43 facilities. We examined the demographics within 5 km and 50 km of these 14 facilities to determine if differences exist from the larger universe of 43 facilities subject to the NESHAP (see Table 2). In contrast to the broader set of NESHAP facilities, the population within 5 km and 50 km of the 14 facilities for which we expect emissions reductions, is above the national average for the percent African American population (20 and 22 percent versus 12 percent). This higher average percent African American population is largely driven by the populations surrounding three facilities, which range from 2 to 8 times the national average. The other 11 facilities are below the national average for the African American population. Also, the average percent Hispanic/Latino (13 and 21 percent versus 19 percent) and the average percent Linguistic Isolation (3 and 4 percent versus 5 percent) demographic category are near or below the national average for these 14 facilities.

TABLE 2—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS FOR LEAD ACID BATTERY MANUFACTURING AREA SOURCE NESHAP FACILITIES

Demographic group	Nationwide	All existing NESHAP facilities (43 facilities)		NESHAP facilities for which emissions reductions are expected (14 facilities)	
		Population within 5 km	Population within 50 km	Population within 50 km	Population within 5 km
Total Population	328,016,242	49,508,055	2,293,170	12,320,826	420,432
	Race and Ethnicity by Percent				
White	60	52	38	51	57
African American	12	12	10	20	22
Native American	0.7	0.3	0.3	0.4	0.4
Hispanic or Latino (includes white and nonwhite)	19	25	43	21	13
Other and Multiracial	8	11	9	8	8
	Income by Percent				
Below Poverty Level	13	12	14	14	15
Above Poverty Level	87	88	86	86	85
	Education by Percent				
Over 25 and without a High School Diploma	12	14	18	13	11
Over 25 and with a High School Diploma	88	86	82	87	89
	Linguistically Isolated by Percent				

TABLE 2—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS FOR LEAD ACID BATTERY MANUFACTURING AREA SOURCE NESHAP FACILITIES—Continued

Demographic group	Nationwide	All existing NESHAP facilities (43 facilities)		NESHAP facilities for which emissions reductions are expected (14 facilities)	
		Population within 5 km	Population within 50 km	Population within 50 km	Population within 5 km
Linguistically Isolated	5	7	9	4	3

Notes:
• The nationwide population count and all demographic percentages are based on the Census' 2015–2019 American Community Survey 5-year block group averages and include Puerto Rico. Demographic percentages based on different averages may differ. The total population counts within 5 km and 50 km of all facilities are based on the 2010 Decennial Census block populations.
• To avoid double counting, the "Hispanic or Latino" category is treated as a distinct demographic category for these analyses. A person is identified as one of five racial/ethnic categories above: White, African American, Native American, Other and Multiracial, or Hispanic/Latino. A person who identifies as Hispanic or Latino is counted as Hispanic/Latino for this analysis, regardless of what race this person may have also identified as in the Census.

The methodology and the results of the demographic analysis are presented in a technical report, *Analysis of Demographic Factors for Populations Living Near Lead Acid Battery Manufacturing Facilities,* available in the docket for this action (Docket ID No. EPA–HQ–OAR–2021–0619).

As explained in the proposal preamble (87 FR 10140), current ambient air quality monitoring data and modeling analyses indicate that ambient lead concentrations near the existing lead acid battery manufacturing facilities are all below the NAAQS for lead. The CAA identifies two types of NAAQS: primary and secondary standards. Primary standards provide public health protection, including protecting the health of ''sensitive'' populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. With ambient concentrations below the NAAQS prior to the finalization of these standards, we conclude that the emissions from lead acid battery manufacturing area source facilities are not likely to pose significant risks or impacts to human health in the baseline prior to these regulations. The review and update of the NSPS and NESHAP in this action will further reduce lead exposures and HAP emissions to provide additional protection to human health and the environment. The EPA expects that the Lead Acid Battery Manufacturing NSPS and NESHAP will reduce future lead emissions due to the more stringent standards finalized for the grid casting, paste mixing, and lead reclamation processes. We expect lead emission reductions of 0.64 tpy from paste mixing facilities at existing lead acid battery manufacturing plants as discussed in sections III.A.3 and III.B.3. We also expect to provide additional protection to human health and the environment by finalizing compliance assurance measures such as requirements for performance testing, inspections, monitoring, recordkeeping, and reporting and by requiring compliance with the standards at all times (including periods of SSM), and by expanding the applicability provisions to certain battery component facilities. The rules will also increase data transparency through electronic reporting. Therefore, the level of HAP emissions to which populations in proximity to the affected sources are exposed will be reduced by the NESHAP requirements being finalized in this action and will be minimized at any future new, modified, or reconstructed source under the NSPS.

V. Statutory and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to OMB for review.

B. Paperwork Reduction Act (PRA)

The information collection activities in the final rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) documents that the EPA prepared have been assigned EPA ICR number 2739.01 and OMB control number 2060–NEW for 40 CFR part 60, subpart KKa, and EPA ICR number 2256.07 and OMB control number 2060–0598 for the NESHAP. You can find a copy of the ICRs in the docket for this rule, and they are briefly summarized here. The ICRs are specific to information collection associated with the lead acid battery manufacturing source category, through the new 40 CFR part 60, subpart KKa, and amendments to 40 CFR part 63, subpart PPPPPP. We are finalizing changes to the testing, recordkeeping and reporting requirements associated with 40 CFR part 63, subpart PPPPPP, in the form of requiring performance tests every 5 years and including the requirement for electronic submittal of reports. In addition, the number of facilities subject to the standards changed. The number of respondents was revised from 41 to 43 for the NESHAP based on our review of operating permits and consultation with industry representatives and state/local agencies. We are finalizing recordkeeping and reporting requirements associated with the new NSPS, 40 CFR part 60, subpart KKa, including notifications of construction/reconstruction, initial startup, conduct of performance tests, and physical or operational changes; reports of opacity results, performance test results and semiannual reports if excess emissions occur or continuous emissions monitoring systems are used; and keeping records of performance test results and pressure drop monitoring.

Respondents/affected entities: The respondents to the recordkeeping and reporting requirements are owners or operators of lead acid battery manufacturing sources subject to 40 CFR part 60, subpart KKa, and 40 CFR part 63, subpart PPPPPP.

Respondent's obligation to respond: Mandatory (40 CFR part 60, subpart KKa, and 40 CFR part 63, subpart PPPPPP).

Estimated number of respondents: 43 facilities for 40 CFR part 63, subpart

PPPPPP, and 0 facilities for 40 CFR part 60, subpart KKa.

Frequency of response: The frequency of responses varies depending on the burden item. Responses include onetime review of rule amendments, reports of performance tests, and semiannual excess emissions and continuous monitoring system performance reports.

Total estimated burden: The annual recordkeeping and reporting burden for responding facilities to comply with all of the requirements in the new NSPS, 40 CFR part 60, subpart KKa, and the NESHAP, averaged over the 3 years of this ICR, is estimated to be 2,490 hours (per year). The average annual burden to the Agency over the 3 years after the amendments are final is estimated to be 60 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The annual recordkeeping and reporting cost for responding facilities to comply with all of the requirements in the new NSPS and the NESHAP, averaged over the 3 years of this ICR, is estimated to be $168,000 (rounded, per year). There are no estimated capital and operation and maintenance costs. The total average annual Agency cost over the first 3 years after the amendments are final is estimated to be $3,070.

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 the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the **Federal Register** and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities in this final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are small businesses that own lead acid battery manufacturing facilities or facilities that do not make lead acid batteries but have a lead acid battery grid casting process or a lead oxide production process. The Agency has determined that there are nine small businesses subject to the requirements of this action, and that eight of these small businesses are estimated to experience impacts of less than 1 percent of their revenues. The Agency estimates that one small business may experience an impact of approximately 1.6 percent of their annual revenues once every 5 years mainly due to the compliance testing requirements, with this one small business representing approximately 11 percent of the total number of affected small entities. The other 4 of the 5 years, we estimate the costs would be less than 1 percent of annual revenues for this one small business. Details of this analysis are presented in *Economic Impact and Small Business Analysis for the Lead Acid Battery Manufacturing NSPS Review and NESHAP Area Source Technology Review: Final Report,* which is available in the docket for this action.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. No tribal facilities are known to be engaged in the industries that would be affected by this action nor are there any adverse health or environmental effects from this action. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. The EPA's assessment of the potential impacts to human health from emissions at existing sources were discussed at proposal (87 FR 10140). The newly required work practices to minimize fugitive dust containing lead and the revised emission limits described in sections III.A.4 and III.B.4 will reduce actual and/or allowable lead emissions, thereby reducing potential exposure to children, including the unborn.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

This rulemaking involves technical standards. Therefore, the EPA conducted searches through the Enhanced NSSN Database managed by the American National Standards Institute (ANSI) to determine if there are voluntary consensus standards (VCS) that are relevant to this action. The Agency also contacted VCS organizations and accessed and searched their databases. Searches were conducted for the EPA Methods 9, 12, 22, and 29 of 40 CFR part 60, appendix A. No applicable VCS were identified for EPA Methods 12, 22, and 29 for lead.

During the search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures similar to the EPA's reference method, the EPA considered it as a potential equivalent method. All potential standards were reviewed to determine the practicality of the VCS for this rule. This review requires significant method validation data which meets the requirements of the EPA Method 301 for accepting alternative methods or scientific, engineering and policy equivalence to procedures in the EPA reference methods. The EPA may reconsider determinations of impracticality when additional information is available for particular VCS.

One VCS was identified as an acceptable alternative to an EPA test method for the purposes of this rule; ASTM D7520–16, ''Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere''. ASTM D7520–16 is a test method describing the procedures to determine the opacity of a plume using digital imagery and associated hardware and software. The opacity of a plume is determined by the application of a Digital Camera Opacity Technique (DCOT) that consists of a Digital Still Camera, Analysis Software, and the Output Function's content to obtain and interpret digital images to determine and report plume opacity. ASTM

D7520–16 is an acceptable alternative to EPA Method 9 with the following conditions:

1. During the DCOT certification procedure outlined in section 9.2 of ASTM D7520–16, you or the DCOT vendor must present the plumes in front of various backgrounds of color and contrast representing conditions anticipated during field use such as blue sky, trees, and mixed backgrounds (clouds and/or a sparse tree stand).

2. You must also have standard operating procedures in place including daily or other frequency quality checks to ensure the equipment is within manufacturing specifications as outlined in section 8.1 of ASTM D7520–16.

3. You must follow the record keeping procedures outlined in 40 CFR 63.10(b)(1) for the DCOT certification, compliance report, data sheets, and all raw unaltered JPEGs used for opacity and certification determination.

4. You or the DCOT vendor must have a minimum of four independent technology users apply the software to determine the visible opacity of the 300 certification plumes. For each set of 25 plumes, the user may not exceed 15 percent opacity of anyone reading and the average error must not exceed 7.5 percent opacity.

5. This approval does not provide or imply a certification or validation of any vendor's hardware or software. The onus to maintain and verify the certification and/or training of the DCOT camera, software and operator in accordance with ASTM D7520–16 and the VCS memorandum is on the facility, DCOT operator, and DCOT vendor.

The search identified one other VCS that was a potentially acceptable alternative to an EPA test method for the purposes of this rule. However, after reviewing the standards, the EPA determined that the candidate VCS ASTM D4358–94 (1999), ''Standard Test Method for Lead and Chromium in Air Particulate Filter Samples of Lead Chromate Type Pigment Dusts by Atomic Absorption Spectroscopy,'' is not an acceptable alternative to EPA Method 12 due to lack of equivalency, documentation, validation data, and other important technical and policy considerations. Additional information for the VCS search and determinations can be found in the memorandum *Voluntary Consensus Standard Results for Review of Standards of Performance for Lead Acid Battery Manufacturing Plants and National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery,* which is available in the docket for this action.

The ASTM standards (methods) are reasonably available for purchase individually through ASTM, International (see 40 CFR 60.17 and 63.14) and through the American National Standards Institute (ANSI) Webstore, *https://webstore.ansi.org.* Telephone (212) 642–4980 for customer service.

We are also incorporating by reference the EPA guidance document ''Fabric Filter Bag Leak Detection Guidance'' (EPA–454/R–98–015). This document provides guidance on fabric filter and monitoring systems including monitor selection, installation, set up, adjustment, and operation. The guidance also discusses factors that may affect monitor performance as well as quality assurance procedures.

The EPA guidance document ''Fabric Filter Bag Leak Detection Guidance'' (EPA–454/R–98–015) is reasonably available at *https://www3.epa.gov/ttnemc01/cem/tribo.pdf* or by contacting the National Technical Information Service (NTIS) at 1–800–553–6847.

Under 40 CFR 63.7(f) and 68.3(f), a source may apply to the EPA to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures in the final rule or any amendments.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629; February 16, 1994) directs Federal agencies, to the greatest extent practicable and permitted by law, to make EJ part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations (people of color and/or indigenous peoples) and low-income populations.

The EPA anticipates that the human health and environmental conditions that exist prior to this action have the potential to result in disproportionate and adverse human health or environmental effects on people of color, low-income populations, and/or indigenous peoples. However, as we explained in the proposed rule preamble, based on analyses of emissions and available ambient monitoring data (as described in section IV.A of the proposal preamble (87 FR 10140)), ambient lead concentrations near the facilities are all below the NAAQS for lead prior to these regulations. Therefore, we concluded that the emissions from lead acid battery area source facilities are not likely to pose significant risks or impacts to human health if facilities are complying with the NESHAP (see 87 FR 10134 at 10140).

The EPA anticipates that this action is likely to reduce the existing potential disproportionate and adverse effects on people of color, low-income populations and/or indigenous peoples. The documentation for this decision is contained in section IV.F of this preamble. As discussed in section IV.F of this preamble, the demographic analysis indicates that the following groups are above the national average within 5 km of the 43 existing facilities: Hispanics/Latino, people living below the poverty level, 25 years old or greater without a high school diploma, and people living in linguistic isolation. Populations within 5 km of the 14 facilities that the EPA expects that the Lead Acid Battery Manufacturing NESHAP will result in HAP emissions reductions are above the national average for African Americans and people living below the poverty level. This action further reduces lead and other criteria and HAP emissions to provide additional protection to human health and the environment.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report for this action to each House of the Congress and to the Comptroller General of the United States. Neither the NSPS nor the NESHAP amended by this action constitute a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Parts 60 and 63

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

Michael S. Regan,

Administrator.

For the reasons cited in the preamble, title 40, chapter I, parts 60 and 63 of the Code of Federal Regulations are amended as follows:

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 4701 *et seq.*

Subpart A—General Provisions

■ 2. Section 60.17 is amended by:
■ a. Redesignating paragraphs (h)(196) through (212) as paragraphs (h)(197) through (213);
■ b. Adding new paragraph (h)(196); and
■ c. Revising paragraph (j)(1).

The addition and revision read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(h) * * *

(196) ASTM D7520–16, Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere, approved April 1, 2016; IBR approved for § 60.374a(d).

* * * * *

(j) * * *

(1) EPA–454/R–98–015, Office of Air Quality Planning and Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, September 1997, *https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000D5T6.PDF;* IBR approved for §§ 60.373a(b); 60.2145(r); 60.2710(r); 60.4905(b); 60.5225(b).

* * * * *

■ 3. The heading for subpart KK is revised to read as follows:

Subpart KK—Standards of Performance for Lead-Acid Battery Manufacturing Plants for Which Construction, Reconstruction, or Modification Commenced After January 14, 1980, and On or Before February 23, 2022

■ 4. Section 60.370 is amended by revising paragraph (c) to read as follows:

§ 60.370 Applicability and designation of affected facility.

* * * * *

(c) Any facility under paragraph (b) of this section the construction or modification of which is commenced after January 14, 1980, and on or before February 23, 2022, is subject to the requirements of this subpart.

■ 5. Subpart KKa is added to read as follows:

Subpart KKa—Standards of Performance for Lead Acid Battery Manufacturing Plants for Which Construction, Modification or Reconstruction Commenced After February 23, 2022

Sec.

60.370a Applicability and designation of affected facility.
60.371a Definitions.
60.372a Standards for lead.
60.373a Monitoring of emissions and operations.
60.374a Test methods and procedures.
60.375a Recordkeeping and reporting requirements.

§ 60.370a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the affected facilities listed in paragraph (b) of this section at any lead acid battery manufacturing plant that produces or has the design capacity to produce in one day (24 hours) batteries containing an amount of lead equal to or greater than 5.9 Mg (6.5 tons).

(b) The provisions of this subpart are applicable to the following affected facilities used in the manufacture of lead acid storage batteries:

(1) Grid casting facility.
(2) Paste mixing facility.
(3) Three-process operation facility.
(4) Lead oxide manufacturing facility.
(5) Lead reclamation facility.
(6) Other lead-emitting operations.

(c) Any facility under paragraph (b) of this section for which the construction, modification, or reconstruction is commenced after February 23, 2022, is subject to the requirements of this subpart.

§ 60.371a Definitions.

As used in this subpart, the definitions in paragraphs (a) through (i) of this section apply. All terms not defined in this subpart have the meaning given them in the Act and in subpart A of this part.

(a) *Bag leak detection system* means a system that is capable of continuously monitoring particulate matter (dust) loadings in the exhaust of a fabric filter (baghouse) in order to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

(b) *Lead acid battery manufacturing plant* means any plant that produces a storage battery using lead and lead compounds for the plates and sulfuric acid for the electrolyte.

(c) *Grid casting facility* means the facility which includes all lead melting pots that remelt scrap from onsite lead acid battery manufacturing processes, and machines used for casting the grid used in lead acid batteries.

(d) *Lead oxide manufacturing facility* means a facility that produces lead oxide from lead for use in lead acid battery manufacturing, including lead oxide production and product recovery operations. Local exhaust ventilation or building ventilation exhausts serving lead oxide production areas are not part of the lead oxide manufacturing facility.

(e) *Lead reclamation facility* means the facility that casts remelted lead scrap generated by onsite lead acid battery manufacturing processes into lead ingots for use in the battery manufacturing process, and which is not a furnace affected under subpart L of this part. Lead scrap remelting processes that are used directly (not cast into an ingot first) in a grid casting facility or a three-process operation facility are parts of those facilities and are not part of a lead reclamation facility.

(f) *Other lead-emitting operation* means any lead acid battery manufacturing plant operation from which lead emissions are collected and ducted to the atmosphere and which is not part of a grid casting, lead oxide manufacturing, lead reclamation, paste mixing, or three-process operation facility, or a furnace affected under subpart L of this part. These operations also include local exhaust ventilation or building ventilation exhausts serving lead oxide production areas.

(g) *Paste mixing facility* means the facility including lead oxide storage, conveying, weighing, metering, and charging operations; paste blending, handling, and cooling operations; and plate pasting, takeoff, cooling, and drying operations.

(h) *Three-process operation facility* means the facility including those processes involved with plate stacking, burning or strap casting, and assembly of elements into the battery case.

(i) *Total enclosure* means a containment building that is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and that has limited openings to allow access and egress for people and vehicles.

§ 60.372a Standards for lead.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart may cause the emissions listed in paragraphs (a)(1) through (8) of this section to be discharged into the atmosphere. The emission limitations and opacity limitations listed in paragraphs (a)(1) through (8) of this section apply at all times, including periods of startup, shutdown and malfunction. As provided in § 60.11(f), this paragraph (a) supersedes the exemptions for periods of startup, shutdown, and malfunction in the general provisions in subpart A of this part. You must also comply with

the requirements in paragraphs (b) and (c) of this section.

(1) From any grid casting facility, any gases that contain lead in excess of 0.08 milligram of lead per dry standard cubic meter of exhaust (0.000035 gr/dscf).

(2) From any paste mixing facility, any gases that contain in excess of 0.10 milligram of lead per dry standard cubic meter of exhaust (0.0000437 gr/dscf) or emit no more than 0.9 gram of lead per hour (0.002 lbs/hr) total from all paste mixing sources. If a facility is complying with the 0.9 gram of lead per hour, you must sum the emission rate from all the paste mixing sources.

(3) From any three-process operation facility, any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(4) From any lead oxide manufacturing facility, any gases that contain in excess of 5.0 milligrams of lead per kilogram of lead feed (0.010 lb/ton).

(5) From any lead reclamation facility, any gases that contain in excess of 0.45 milligrams of lead per dry standard cubic meter of exhaust (0.000197 gr/dscf).

(6) From any other lead-emitting operation, any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(7) From any affected facility other than a lead reclamation facility, any gases with greater than 0 percent opacity (measured according to EPA Method 9 of appendix A to this part and rounded to the nearest whole percentage or measured according to EPA Method 22 of appendix A to this part).

(8) From any lead reclamation facility, any gases with greater than 5 percent opacity (measured according to EPA Method 9 of appendix A to this part and rounded to the nearest whole percentage).

(b) When two or more facilities at the same plant (except the lead oxide manufacturing facility) are ducted to a common control device, an equivalent standard for the total exhaust from the commonly controlled facilities must be determined using equation 1 to this paragraph (b) as follows:

Equation 1 to paragraph (b): $$S_e = \sum_{a=1}^{N} S_a \left(\frac{Q_{sd_a}}{Q_{sd_T}} \right)$$

Where:

S_e = is the equivalent standard for the total exhaust stream, mg/dscm (gr/dscf).

S_a = is the actual standard for each exhaust stream ducted to the control device, mg/dscm (gr/dscf).

N = is the total number of exhaust streams ducted to the control device.

Q_{sda} = is the dry standard volumetric flow rate of the effluent gas stream from each facility ducted to the control device, dscm/hr (dscf/hr).

Q_{sdT} = is the total dry standard volumetric flow rate of all effluent gas streams ducted to the control device, dscm/hr (dscf/hr).

(c) The owner or operator must prepare, and at all times operate according to, a fugitive dust mitigation plan that describes in detail the measures that will be put in place and implemented to control fugitive dust emissions in the lead oxide unloading and storage areas. You must prepare a fugitive dust mitigation plan according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) The owner or operator must submit the fugitive dust mitigation plan to the Administrator or delegated authority for review and approval when initially developed and any time changes are made.

(2) The fugitive dust mitigation plan must at a minimum include the requirements specified in paragraphs (c)(2)(i) through (iv) of this section.

(i) *Lead oxide unloading and storage areas.* Surfaces used for vehicular material transfer activity must be cleaned at least once per month, by wet wash or a vacuum equipped with a filter rated by the manufacturer to achieve 99.97 percent capture efficiency for 0.3 micron particles in a manner that does not generate fugitive lead dust, except when sand or a similar material has been spread on the area to provide traction on ice or snow.

(ii) *Spills in lead oxide unloading and storage areas.* For any leak or spill that occurs during the unloading and storage process, complete washing or vacuuming the area to remove all spilled or leaked lead bearing material within 2 hours of the leak or spill occurrence.

(iii) *Materials storage.* Dust forming materials (that contain lead or lead compounds) must be stored in sealed, leak-proof containers or in a total enclosure.

(iv) *Records.* The fugitive dust mitigation plan must specify that records be maintained of all cleaning performed under paragraph (c)(2)(i) and (ii) of this section.

§ 60.373a Monitoring of emissions and operations.

(a) The owner or operator of any lead acid battery manufacturing facility subject to the provisions of this subpart and controlled by a scrubbing system(s) must install, calibrate, maintain, and operate a monitoring device(s) that measures and records the liquid flow rate and pressure drop across the scrubbing system(s) at least once every 15 minutes. The monitoring device must have an accuracy of ±5 percent over its operating range. The operating liquid flow rate must be maintained within ±10 percent of the average liquid flowrate during the most recent performance test. If a liquid flow rate or pressure drop is observed outside of the normal operational ranges as determined during the most recent performance test, you must record the incident and take immediate corrective actions. You must also record the corrective actions taken. You must submit an excess emissions and monitoring systems performance report and summary report required under § 60.375a(c).

(b) Emissions points controlled by a fabric filter without a secondary filter must meet the requirements of paragraphs (b)(1) and (2) of this section and either paragraph (b)(3) or (4) of this section. New lead acid battery plants with emission points controlled by a fabric filter without a secondary filter must meet the requirements of paragraph (b)(5) of this section. Fabric filters equipped with a high efficiency particulate air (HEPA) filter or other secondary filter must comply with the requirements specified in paragraphs (b)(1) and (6) of this section.

(1) You must perform quarterly inspections and maintenance to ensure proper performance of each fabric filter. This includes inspection of structural and filter integrity.

(2) If it is not possible for you to take the corrective actions specified in paragraph (b)(3)(iii) or (iv) of this section for a process or fabric filter control device, you must keep at least one replacement fabric filter onsite at all times for that process or fabric filter control device. The characteristics of the

replacement filters must be the same as the current fabric filters in use or have characteristics that would achieve equal or greater emission reductions.

(3) Install, maintain, and operate a pressure drop monitoring device to measure the differential pressure drop across the fabric filter during all times when the process is operating. The pressure drop must be recorded at least twice per day (at least 8 hours apart) if the results of the most recent performance test indicate that emissions from the facility are greater than 50 percent of the applicable lead emissions limit in § 60.372a(a)(1) through (6). The pressure drop must be recorded at least once per day if the results of the most recent performance test indicate that emissions are less than or equal to 50 percent of the applicable lead emissions limit in § 60.372a(a)(1) through (6). If a pressure drop is observed outside of the normal operational ranges as specified by the manufacturer, you must record the incident and take immediate corrective actions. You must submit an excess emissions and continuous monitoring system performance report and summary report required under § 60.375a(c). You must also record the corrective actions taken and verify pressure drop is within normal operational range. These corrective actions may include but not be limited to those provided in paragraphs (b)(3)(i) through (iv) of this section.

(i) Inspecting the filter and filter housing for air leaks and torn or broken filters.

(ii) Replacing defective filter media, or otherwise repairing the control device.

(iii) Sealing off a defective control device by routing air to other control devices.

(iv) Shutting down the process producing the lead emissions.

(4) Conduct a visible emissions observation using EPA Method 9 (6 minutes) or EPA Method 22 (5 minutes) of appendix A to this part while the process is in operation to verify that no visible emissions are occurring at the discharge point to the atmosphere from any emissions source subject to the requirements of § 60.372a(a) or (b). The visible emissions observation must be conducted at least twice daily (at least 6 hours apart) if the results of the most recent performance test indicate that emissions are greater than 50 percent of the applicable lead emissions limit in § 60.372a(a)(1) through (6). The visible emissions observation must be conducted at least once per day if the results of the most recent performance test indicate that emissions are less than or equal to 50 percent of the applicable lead emissions limit in § 60.372a(a)(1) through (6). If visible emissions are detected, you must record the incident and submit this information in an excess emissions and continuous monitoring system performance report and summary report required under § 60.375a(c) and take immediate corrective action. You must also record the corrective actions taken. These corrective actions may include, but are not limited to, those provided in paragraphs (b)(3)(i) through (iv) of this section.

(5) If the lead acid battery manufacturing plant was constructed after February 23, 2022, and have emissions points controlled by a fabric filter, you must install and operate a bag leak detection system that meets the specifications and requirements in paragraphs (b)(5)(i) through (ix) of this section. For any other affected facility listed in § 60.370a(b) that was constructed, modified, or reconstructed after February 23, 2022, that operates a bag leak detection system, the bag leak detection system must meet the specifications and requirements in paragraphs (b)(5)(i) through (ix) of this section. Emission points controlled by a fabric filter that is equipped with, and monitored with, a bag leak detection system meeting the specifications and requirements in paragraphs (b)(5)(i) through (ix) of this section may have the inspections required in paragraph (b)(1) of this section performed semiannually.

(i) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter as lead emissions at concentrations at or below the values in § 60.372a(a), as applicable to the process for which the fabric filter is used to control emissions. Where the fabric filter is used as a control device for more than one process, the lowest applicable value in § 60.372a(a) must be used.

(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 alarm when an increase in relative particulate loadings is detected over a preset level.

(iv) You must install and operate the bag leak detection system in a manner consistent with the guidance provided in ''Office of Air Quality Planning and Standards (OAQPS) Fabric Filter Bag Leak Detection Guidance'' (EPA–454/R–98–015) (incorporated by reference, see § 60.17) and the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system must, 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, you must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the approved standard operating procedures manual required under paragraph (b)(2)(ix) of this section. You cannot increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection that demonstrates that the fabric filter is in good operating condition.

(vii) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, you must install the bag leak detector downstream of the fabric filter.

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

(ix) You must develop a standard operating procedures manual for the bag leak detection system that includes procedures for making system adjustments and a corrective action plan, which specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan must include, at a minimum, the procedures that you will use to determine and record the time and cause of the alarm as well as the corrective actions taken to minimize emissions as specified in paragraphs (b)(5)(ix)(A) and (B) of this section.

(A) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(B) The cause of the alarm must be alleviated by taking the necessary corrective action(s) that may include, but not be limited to, those listed in paragraphs (b)(5)(ix)(B)(*1*) through (*6*) of this section.

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

(*2*) Sealing off defective bags or filter media.

(*3*) Replacing defective bags or filter media, or otherwise repairing the control device.

(*4*) Sealing off defective baghouse compartment.

(5) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(6) Shutting down the process producing the lead emissions.

(6) Emissions points controlled by a fabric filter equipped with a secondary filter, such as a HEPA filter, are exempt from the requirement in paragraph (b)(5) of this section to be equipped with a bag leak detection system. You must meet the requirements specified in paragraph (b)(6)(i) of this section and either paragraph (b)(6)(ii) or (iii) of this section.

(i) If it is not possible for you to take the corrective actions specified in paragraph (b)(3)(iii) or (iv) of this section for a process or fabric filter control device, you must keep at least one replacement primary fabric filter and one replacement secondary filter onsite at all times for that process or fabric filter control device. The characteristics of the replacement filters must be the same as the current fabric filters in use or have characteristics that would achieve equal or greater emission reductions.

(ii) You must perform the pressure drop monitoring requirements in paragraph (b)(3) of this section. You may perform these requirements once per week rather than once or twice daily.

(iii) You must perform the visible emissions observation requirements in paragraph (b)(4) of this section. You may perform these requirements once per week rather than once or twice daily.

§ 60.374a Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator must use as reference methods and procedures the test methods in appendix A to this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) After the initial performance test required in § 60.8(a), you must conduct subsequent performance tests to demonstrate compliance with the lead and opacity standards in § 60.372a. Performance testing must be conducted for each affected source subject to lead and opacity standards in § 60.372a, that has not had a performance test within the last 5 years, except as described in paragraph (c) of this section. Thereafter, subsequent performance tests for each affected source must be completed no less frequently than every 5 years from the date the emissions source was last tested.

(c) In lieu of conducting subsequent performance tests for each affected source, you may elect to group similar affected sources together and conduct subsequent performance tests on one representative affected source within each group of similar affected sources. The determination of whether affected sources are similar must meet the criteria in paragraph (c)(1) of this section. If you decide to test representative affected sources, you must prepare and submit a testing plan as described in paragraph (c)(3) of this section.

(1) If you elect to test representative affected sources, the affected sources that are grouped together must be of the same process type (*e.g.,* grid casting, paste mixing, three-process operations) and also have the same type of air pollution control device (*e.g.,* fabric filters). You cannot group affected sources from different process types or with different air pollution control device types together for the purposes of this section.

(2) The results of the performance test conducted for the affected source selected as representative of a group of similar affected sources will represent the results for each affected source within the group. In the performance test report, all affected sources in the group will need to be listed.

(3) If you plan to conduct subsequent performance tests on representative emission units, you must submit a test plan. This test plan must be submitted to the Administrator or delegated authority for review and approval no later than 90 days prior to the first scheduled performance test. The test plan must contain the information specified in paragraphs (c)(3)(i) through (iii) of this section.

(i) A list of all emission units. This list must clearly identify all emission units that have been grouped together as similar emission units. Within each group of emission units, you must identify the emission unit that will be the representative unit for that group and subject to performance testing.

(ii) A list of the process type and type of air pollution control device on each emission unit.

(iii) The date of last test for each emission unit and a schedule indicating when you will conduct performance tests for each emission unit within the representative groups.

(4) If you conduct subsequent performance tests on representative emission units, the unit with the oldest test must be tested first, and each subsequent performance test must be performed for a different unit until all units in the group have been tested. The order of testing for each subsequent test must proceed such that the unit in the group with the least recent performance test is the next unit to be tested.

(5) You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. You must make available to the Administrator in the test report, records as may be necessary to determine the conditions of performance tests.

(d) The owner or operator must determine compliance with the lead and opacity standards in § 60.372a, as follows:

(1) EPA Method 12 or EPA Method 29 of appendix A to this part must be used to determine the lead concentration (CPb) and the volumetric flow rate (Qsda) of the effluent gas. The sampling time and sample volume for each run must be at least 60 minutes and 0.85 dscm (30 dscf).

(2) EPA Method 9 of appendix A to this part and the procedures in § 60.11 must be used to determine opacity during the performance test. For EPA Method 9, the opacity numbers must be rounded off to the nearest whole percentage. ASTM D7520–16 (incorporated by reference, see § 60.17) is an acceptable alternative to EPA Method 9 with the specified conditions in paragraphs (d)(2)(i) through (v) of this section.

(i) During the digital camera opacity technique (DCOT) certification procedure outlined in Section 9.2 of ASTM D7520–16, you or the DCOT vendor must present the plumes in front of various backgrounds of color and contrast representing conditions anticipated during field use such as blue sky, trees, and mixed backgrounds (clouds and/or a sparse tree stand).

(ii) You must also have standard operating procedures in place including daily or other frequency quality checks to ensure the equipment is within manufacturing specifications as outlined in Section 8.1 of ASTM D7520–16.

(iii) You must follow the record keeping procedures outlined in § 63.10(b)(1) for the DCOT certification, compliance report, data sheets, and all raw unaltered JPEGs used for opacity and certification determination.

(iv) You or the DCOT vendor must have a minimum of four (4) independent technology users apply the software to determine the visible opacity of the 300 certification plumes. For each set of 25 plumes, the user may not exceed 15 percent opacity of any

one reading and the average error must not exceed 7.5 percent opacity.

(v) This approval does not provide or imply a certification or validation of any vendor's hardware or software. The onus to maintain and verify the certification and/or training of the DCOT camera, software and operator in accordance with ASTM D7520–16 and this letter is on the facility, DCOT operator, and DCOT vendor.

(3) When different operations in a three-process operation facility are ducted to separate control devices, the lead emission concentration (C) from the facility must be determined using equation 1 to this paragraph (d)(3) as follows:

$$\text{Equation 1 to paragraph (d)(3):} \quad C = \frac{\sum_{a=1}^{n}(C_a Q_{sda})}{\sum_{a=1}^{n} Q_{sda}}$$

Where:

C = concentration of lead emissions for the entire facility, mg/dscm (gr/dscf).

C_a = concentration of lead emissions from facility "a," mg/dscm (gr/dscf).

Q_{sda} = volumetric flow rate of effluent gas from facility "a," dscm/hr (dscf/hr).

n = total number of control devices to which separate operations in the facility are ducted.

(4) The owner or operator of lead oxide manufacturing facility must determine compliance with the lead standard in § 60.372a(a)(5) as follows:

(i) The emission rate (E) from lead oxide manufacturing facility must be computed for each run using equation 2 to this paragraph (d)(4)(i) as follows:

$$\text{Equation 2 to paragraph (d)(4)(i):} \quad E = \frac{\sum_{i=1}^{M} C_{Pbi} Q_{sdi}}{PK}$$

Where:

E = emission rate of lead, mg/kg (lb/ton) of lead charged.

C_{Pbi} = concentration of lead from emission point "i," mg/dscm (gr/dscf).

Q_{sdi} = volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

M = number of emission points in the affected facility.

P = lead feed rate to the facility, kg/hr (ton/hr).

K = conversion factor, 1.0 mg/mg (7000 gr/lb).

(ii) The average lead feed rate (P) must be determined for each run using equation 3 to this paragraph (d)(4)(ii) as follows:

$$\text{Equation 3 to paragraph (d)(4)(ii):} \quad P = N * \frac{W}{\Theta}$$

Where:

N = number of lead ingots charged.

W = average mass of the lead ingots, kg (ton).

Θ = duration of run, hr.

§ 60.375a Recordkeeping and reporting requirements.

(a) The owner or operator must keep the records specified in paragraphs (a)(1) through (7) of this section and maintain them in a format readily available for review onsite for a period of 5 years.

(1) Records of pressure drop values and liquid flow rate from the monitoring required in § 60.373a(a) for scrubbing systems.

(2) Records of fabric filter inspections and maintenance activities required in § 60.373a(b)(1).

(3) Records required under § 60.373a(b)(3) or (b)(6)(ii) of fabric filter pressure drop, pressure drop observed outside of normal operating ranges as specified by the manufacturer, and corrective actions taken.

(4) Records of the required opacity measurements in § 60.373a(b)(4) or (b)(6)(iii).

(5) If a bag leak detection system is used under § 60.373a(b)(5), for a period of 5 years, keep the records specified in paragraphs (a)(5)(i) through (iii) of this section.

(i) Electronic records of the bag leak detection system output.

(ii) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the corrective actions taken, and the date and time the cause of the alarm was corrected.

(iii) All records of inspections and maintenance activities required under § 60.373a(b)(5).

(6) Records of all cleaning required as part of the practices described in the fugitive dust mitigation plan required under § 60.372a(c) for the control of fugitive dust emissions.

(7) You must keep the records of failures to meet an applicable standard in this part as specified in paragraphs (a)(7)(i) through (iii) of this section.

(i) In the event that an affected unit fails to meet an applicable standard in this part, record the number of failures. For each failure record the date, time, the cause and duration of each failure.

(ii) For each failure to meet an applicable standard in this part, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.

(iii) Record actions taken to minimize emissions and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(b) Beginning on April 24, 2023, within 60 days after the date of completing each performance test or demonstration of compliance required by this subpart, you must submit the results of the performance test following the procedures specified in paragraphs (b)(1) through (3) of this section.

(1) *Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert) at the time of the test.* Submit the results of the performance test to the EPA via

the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). The data must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website.

(2) *Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test.* The results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI.

(3) *Data collected containing confidential business information (CBI).*

(i) The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information submitted under paragraph (b)(1) or (2) of this section, you must submit a complete file, including information claimed to be CBI, to the EPA.

(ii) The file must be generated using the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website.

(iii) Clearly mark the part or all of the information that you claim to be CBI. Information not marked as CBI may be authorized for public release without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

(iv) The preferred method for CBI submittal is for it to be transmitted electronically using email attachments, File Transfer Protocol (FTP), or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address *oaqpscbi@epa.gov,* and as described in this paragraph (b)(3), should include clear CBI markings and be flagged to the attention of the Group Leader, Measurement Policy Group. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email *oaqpscbi@epa.gov* to request a file transfer link.

(v) If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: OAQPS Document Control Officer (C404–02), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Lead Acid Battery Sector Lead and Group Leader, Measurement Policy Group. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer wrapping.

(vi) All CBI claims must be asserted at the time of submission. Anything submitted using CEDRI cannot later be claimed CBI. Furthermore, under CAA section 114(c), emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

(vii) You must submit the same file submitted to the CBI office with the CBI omitted to the EPA via the EPA's CDX as described in paragraphs (a)(1) and (2) of this section.

(c) You must submit a report of excess emissions and monitoring systems performance report and summary report according to § 60.7(c) and (d) to the Administrator semiannually. Report the number of failures to meet an applicable standard in this part. For each instance, report the date, time, cause, and duration of each failure. For each failure, the report must include a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions. You must use the appropriate spreadsheet template on the CEDRI website (*https://www.epa.gov/electronic-reporting-air-emissions/cedri*) for this subpart. The date report templates become available will be listed on the CEDRI website. The report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted. Submit all reports to the EPA via CEDRI, which can be accessed through the EPA's CDX (*https://cdx.epa.gov/*). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. As stated in paragraph (b)(3) of this section, do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot later be claimed CBI. If you claim CBI, submit the report following description in paragraph (b)(3) of this section. The same file with the CBI omitted must be submitted to CEDRI as described in this section.

(d) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with that reporting requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (d)(1) through (7) of this section.

(1) You must have been or will be precluded from accessing CEDRI and submitting a required report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.

(2) The outage must have occurred within the period of time beginning five business days prior to the date that the submission is due.

(3) The outage may be planned or unplanned.

(4) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(5) You must provide to the Administrator a written description identifying:

(i) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;

(ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to EPA system outage;

(iii) A description of measures taken or to be taken to minimize the delay in reporting; and

(iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.

(6) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(7) In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved.

(e) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of *force majeure* for failure to timely comply with that reporting requirement. To assert a claim of *force majeure,* you must meet the requirements outlined in paragraphs (e)(1) through (5) of this section.

(1) You may submit a claim if a *force majeure* event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this section, a *force majeure* event is defined as an event that will be or has been caused by

circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (*e.g.,* hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (*e.g.,* large scale power outage).

(2) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(3) You must provide to the Administrator:

(i) A written description of the *force majeure* event;

(ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to the *force majeure* event;

(iii) A description of measures taken or to be taken to minimize the delay in reporting; and

(iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.

(4) The decision to accept the claim of *force majeure* and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(5) In any circumstance, the reporting must occur as soon as possible after the *force majeure* event occurs.

(f) Any records required to be maintained by this subpart that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.

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

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

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

Subpart A—General Provisions

■ 7. Section 63.14 is amended by:
■ a. Revising paragraph (h)(109);
■ b. Removing and reserving paragraph (h)(110);
■ c. Removing and reserving paragraph (n)(3); and
■ d. Revising paragraph (n)(4).

The revisions read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(h) * * *

(109) ASTM D7520–16, Standard Test Method for Determining the Opacity of a Plume in the Outdoor Ambient Atmosphere, approved April 1, 2016; IBR approved for §§ 63.1625(b); table 3 to subpart LLLLL; 63.7823(c) through (e), 63.7833(g); 63.11423(c).

* * * * *

(n) * * *

(4) EPA–454/R–98–015, Office of Air Quality Planning and Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, September 1997, *https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=2000D5T6.PDF;* IBR approved for §§ 63.548(e); 63.864(e); 63.7525(j); 63.8450(e); 63.8600(e); 63.9632(a); 63.9804(f); 63.11224(f); 63.11423(e).

* * * * *

Subpart PPPPP—National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources

■ 8. Section 63.11421 is revised and republished to read as follows:

§ 63.11421 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate a lead acid battery manufacturing plant or a lead acid battery component manufacturing plant that is an area source of hazardous air pollutants (HAP) emissions.

(b) This subpart applies to each new or existing affected source. The affected source is each plant that is either a lead acid battery manufacturing plant or a lead acid battery component manufacturing plant. For each lead acid battery manufacturing plant, the affected source includes all grid casting facilities, paste mixing facilities, three-process operation facilities, lead oxide manufacturing facilities, lead reclamation facilities, and any other lead-emitting operation that is associated with the lead acid battery manufacturing plant. For each lead acid battery component manufacturing plant, the affected source includes all grid casting facilities, paste mixing facilities, three-process operation facilities, and lead oxide manufacturing facilities.

(1) A lead acid battery manufacturing plant affected source is existing if you commenced construction or reconstruction of the affected source on or before April 4, 2007.

(2) A lead acid battery manufacturing plant affected source is new if you commenced construction or reconstruction of the affected source after April 4, 2007.

(3) A lead acid battery component manufacturing plant affected source is existing if you commenced construction or reconstruction of the affected source on or before February 23, 2022.

(4) A lead acid battery component manufacturing plant affected source is new if you commenced construction or reconstruction of the affected source after February 23, 2022.

(c) This subpart does not apply to research and development facilities, as defined in section 112(c)(7) of the Clean Air Act (CAA).

(d) You are exempt from the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 71.3(a). Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart.

(e) For lead acid battery component manufacturing plants, you are exempt from the requirements of §§ 63.11422 through 63.11427 if the conditions of paragraphs (e)(1) through (3) of this section are met.

(1) The grid casting facility, paste mixing facility, three-process operation facility, or lead oxide manufacturing facility is subject to another subpart under this part.

(2) You control lead emissions from the grid casting facility, paste mixing facility, three-process operation facility, or lead oxide manufacturing facility in compliance with the standards specified in the applicable subpart.

(3) The other applicable subpart under this part does not exempt the grid casting facility, paste mixing facility, three-process operation facility, or lead oxide manufacturing facility from the emission limitations or work practice requirements of that subpart. This means you comply with all applicable emissions limitations and work practice standards under the other subpart (*e.g.,* you install and operate the required air pollution controls or have implemented the required work practice to reduce lead emissions to levels specified by the applicable subpart).

■ 9. Section 63.11422 is revised to read as follows:

§ 63.11422 What are my compliance dates?

(a) If you own or operate a lead acid battery manufacturing plant existing affected source, you must achieve compliance with the applicable provisions in this subpart by no later than July 16, 2008, except as specified

in paragraphs (e) through (h) of this section.

(b) If you start up a new lead acid battery manufacturing plant affected source on or before July 16, 2007, you must achieve compliance with the applicable provisions in this subpart not later than July 16, 2007, except as specified in paragraphs (e) through (h) of this section.

(c) If you start up a new lead acid battery manufacturing plant affected source after July 16, 2007, but on or before February 23, 2022, you must achieve compliance with the applicable provisions in this subpart upon startup of your affected source, except as specified in paragraphs (e) through (h) this section.

(d) If you start up a new lead acid battery manufacturing plant or lead acid battery component manufacturing plant affected source after February 23, 2022, you must achieve compliance with the applicable provisions in this subpart not later than February 23, 2023, or upon initial startup of your affected source, whichever is later.

(e) Until February 23, 2026, lead acid battery manufacturing plant affected sources that commenced construction or reconstruction on or before February 23, 2023, must meet all the standards for lead and opacity in 40 CFR 60.372 and the requirements of § 63.11423(a)(1).

(f) Lead acid battery manufacturing plant affected sources that commenced construction or reconstruction on or before February 23, 2023, must comply with the requirements in § 63.11423(a)(2) by February 23, 2026. All affected sources that commence construction or reconstruction after February 23, 2023, must comply with the requirements in § 63.11423(a)(2) by initial startup or February 23, 2023, whichever is later.

(g) Lead acid battery manufacturing plant affected sources that commenced construction or reconstruction on or before February 23, 2023, must comply with the requirements of § 63.11423(a)(3) by August 22, 2023. All affected sources that commence construction or reconstruction after February 23, 2023, must comply with the requirements of § 63.11423(a)(3) by initial startup or February 23, 2023, whichever is later.

(h) After February 23, 2023, lead acid battery manufacturing plant affected sources must comply with the startup, shutdown, and malfunction requirements specified in table 3 to this subpart except that you must comply with the recordkeeping requirements that table 3 refers to in § 63.11424(a)(5) by May 24, 2023.

(i) If you own or operate a lead acid battery component manufacturing plant existing affected source, you must achieve compliance with the applicable provisions in this subpart by no later than February 23, 2026.

■ 10. Section 63.11423 is revised and republished read as follows:

§ 63.11423 What are the standards and compliance requirements for new and existing sources?

(a) You must meet all the standards for lead and opacity as specified in paragraphs (a)(1) through (3) of this section.

(1) Until the compliance date specified in § 63.11422(e), lead acid battery manufacturing plant affected sources must comply with paragraph (a)(1)(i) or (ii) of this section.

(i) You meet all the standards for lead and opacity in 40 CFR 60.372 and the requirements of paragraphs (a)(4) and (5), (b), and (c)(1) through (3) of this section.

(ii) You comply with paragraph (a)(2) of this section.

(2) Beginning no later than the applicable compliance date specified in § 63.11422(f) or (i), you must meet each emission limit in table 1 to this subpart and each opacity standard in table 2 to this subpart that applies to you; you must meet the requirements of paragraphs (a)(4) and (5), (c), and (d) of this section; and you must also comply with the recordkeeping and electronic reporting requirements in § 63.11424(a)(6) and (7) and (b).

(3) Beginning no later than the applicable compliance date specified in § 63.11422(g) or (i), you must comply with the monitoring requirements in paragraph (e) of this section, the recordkeeping and electronic reporting requirements in § 63.11424(a)(1) through (5) and (c) through (f), and the definition of lead reclamation in § 63.11426.

(4) At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard in this part have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(5) When two or more facilities at the same plant (except the lead oxide manufacturing facility) are ducted to a common control device, an equivalent standard for the total exhaust from the commonly controlled facilities must be determined using equation 1 to this paragraph (a)(5) as follows:

Equation 1 to paragraph (a)(5):

$$S_e = \sum_{a=1}^{N} S_a \left(\frac{Q_{sd_a}}{Q_{sd_T}} \right)$$

Where:

S_e = is the equivalent standard for the total exhaust stream, mg/dscm (gr/dscf).

S_a = is the actual standard for each exhaust stream ducted to the control device, mg/dscm (gr/dscf).

N = is the total number of exhaust streams ducted to the control device.

Q_{sda} = is the dry standard volumetric flow rate of the effluent gas stream from each facility ducted to the control device, dscm/hr (dscf/hr).

Q_{sdT} = is the total dry standard volumetric flow rate of all effluent gas streams ducted to the control device, dscm/hr (dscf/hr).

(b) As specified in paragraph (a) of this section, you must meet the monitoring requirements in paragraphs (b)(1) and (2) of this section.

(1) For any emissions point controlled by a scrubbing system, you must meet the requirements in 40 CFR 60.373.

(2) For any emissions point controlled by a fabric filter, you must meet the requirements of paragraph (b)(2)(i) of this section and either paragraph (b)(2)(ii) or (iii) of this section. Fabric filters equipped with a high efficiency particulate air (HEPA) filter or other secondary filter are allowed to monitor less frequently, as specified in paragraph (b)(2)(iv) of this section.

(i) You must perform semiannual inspections and maintenance to ensure proper performance of each fabric filter. This includes inspection of structural and filter integrity. You must record the results of these inspections.

(ii) You must install, maintain, and operate a pressure drop monitoring device to measure the differential pressure drop across the fabric filter during all times when the process is operating. The pressure drop must be recorded at least once per day. If a pressure drop is observed outside of the normal operational ranges as specified by the manufacturer, you must record the incident and take immediate corrective actions. You must also record the corrective actions taken. You must submit a monitoring system performance report in accordance with § 63.10(e)(3).

(iii) You must conduct a visible emissions observation at least once per day while the process is in operation to verify that no visible emissions are occurring at the discharge point to the atmosphere from any emissions source subject to the requirements of paragraph (a) of this section. If visible emissions are detected, you must record the incident and conduct an opacity measurement in accordance with 40 CFR 60.374(b)(3). You must record the results of each opacity measurement. If the measurement exceeds the applicable opacity standard in 40 CFR 60.372(a)(7) or (8), you must submit this information in an excess emissions report required under § 63.10(e)(3).

(iv) Fabric filters equipped with a HEPA filter or other secondary filter are allowed to monitor less frequently, as specified in paragraph (b)(2)(iv)(A) or (B) of this section.

(A) If you are using a pressure drop monitoring device to measure the differential pressure drop across the fabric filter in accordance with paragraph (b)(2)(ii) of this section, you must record the pressure drop at least once per week. If a pressure drop is observed outside of the normal operational ranges as specified by the manufacturer, you must record the incident and take immediate corrective actions. You must also record the corrective actions taken. You must submit a monitoring system performance report in accordance with § 63.10(e)(3).

(B) If you are conducting visible emissions observations in accordance with paragraph (b)(2)(iii) of this section, you must conduct such observations at least once per week and record the results in accordance with paragraph (b)(2)(iii) of this section. If visible emissions are detected, you must record the incident and conduct an opacity measurement in accordance with 40 CFR 60.374(b)(3). You must record the results of each opacity measurement. If the measurement exceeds the applicable opacity standard in 40 CFR 60.372(a)(7) or (8), you must submit this information in an excess emissions report required under § 63.10(e)(3).

(c) As specified in paragraph (a) of this section, you must meet the performance testing requirements in paragraphs (c)(1) through (6) of this section.

(1) Existing sources are not required to conduct an initial performance test if a prior performance test was conducted using the same methods specified in this section and either no process changes have been made since the test, or you can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance with this subpart despite process changes.

(2) Sources without a prior performance test, as described in paragraph (c)(1) of this section, must conduct an initial performance test using the methods specified in paragraphs (c)(2)(i) through (iv) of this section.

(i) EPA Method 12 or EPA Method 29 of appendix A to 40 CFR part 60 must be used to determine the lead concentration (CPb) and the volumetric flow rate (Qsda) of the effluent gas. The sampling time and the sample volume for each run must be at least 60 minutes and 0.85 dscm (30 dscf).

(ii) EPA Method 9 of appendix A to 40 CFR part 60 and the procedures in § 63.6(h) must be used to determine opacity. The opacity numbers must be rounded off to the nearest whole percentage. Or, as an alternative to Method 9, you may use ASTM D7520–16 (incorporated by reference, see § 63.14) with the caveats in paragraphs (c)(4)(ii)(A) through (E) of this section.

(A) During the digital camera opacity technique (DCOT) certification procedure outlined in Section 9.2 of ASTM D7520–16, you or the DCOT vendor must present the plumes in front of various backgrounds of color and contrast representing conditions anticipated during field use such as blue sky, trees, and mixed backgrounds (clouds and/or a sparse tree stand).

(B) You must also have standard operating procedures in place including daily or other frequency quality checks to ensure the equipment is within manufacturing specifications as outlined in Section 8.1 of ASTM D7520–16.

(C) You must follow the recordkeeping procedures outlined in § 63.10(b)(1) for the DCOT certification, compliance report, data sheets, and all raw unaltered JPEGs used for opacity and certification determination.

(D) You or the DCOT vendor must have a minimum of four (4) independent technology users apply the software to determine the visible opacity of the 300 certification plumes. For each set of 25 plumes, the user may not exceed 15 percent opacity of any one reading and the average error must not exceed 7.5 percent opacity.

(E) This approval does not provide or imply a certification or validation of any vendor's hardware or software. The onus to maintain and verify the certification and/or training of the DCOT camera, software, and operator in accordance with ASTM D7520–16 and this letter is on the facility, DCOT operator, and DCOT vendor.

(iii) When different operations in a three-process operation facility are ducted to separate control devices, the lead emission concentration (C) from the facility must be determined using equation 2 to this paragraph (c)(2)(iii) as follows:

$$\text{Equation 2 to paragraph (c)(2)(iii):} \quad C = \frac{\sum_{a=1}^{n}(C_a Q_{sda})}{\sum_{a=1}^{n} Q_{sda}}$$

Where:

C = concentration of lead emissions for the entire facility, mg/dscm (gr/dscf).

Ca = concentration of lead emissions from facility "a," mg/dscm (gr/dscf).

Q_{sda} = volumetric flow rate of effluent gas from facility "a," dscm/hr (dscf/hr).

n = total number of control devices to which separate operations in the facility are ducted.

(iv) For a lead oxide manufacturing facility, the lead emission rate must be determined as specified in paragraphs (c)(2)(iv)(A) and (B) of this section.

(A) The emission rate (E) from lead oxide manufacturing facility must be

computed for each run using equation 3 to this paragraph (c)(2)(iv)(A) as follows:

$$\text{Equation 3 to paragraph (c)(2)(iv)(A):} \quad E = \frac{\sum_{i=1}^{M} C_{Pbi} Q_{sdi}}{PK}$$

Where:

E = emission rate of lead, mg/kg (lb/ton) of lead charged.

C_{Pbi} = concentration of lead from emission point "i," mg/dscm (gr/dscf).

Q_{sdi} = volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

M = number of emission points in the affected facility.

P = lead feed rate to the facility, kg/hr (ton/hr).

K = conversion factor, 1.0 mg/mg (7000 gr/lb).

(B) The average lead feed rate (P) must be determined for each run using equation 4 to this paragraph (c)(2)(iv)(B) as follows:

$$\text{Equation 4 to paragraph (c)(2)(iv)(B):} \quad P = N * \frac{W}{\Theta}$$

Where:

N = number of lead ingots charged.

W = average mass of the lead ingots, kg (ton).

Θ = duration of run, hr.

(3) In conducting the initial performance tests required in § 63.7, you must use as reference methods and procedures the test methods in appendix A to 40 CFR part 60 or other methods and procedures as specified in this section, except as provided in § 63.7(f).

(4) After the initial performance test described in paragraphs (c)(1) through (3) of this section, you must conduct subsequent performance tests every 5 years to demonstrate compliance with each applicable emissions limitations and opacity standards. Within three years of February 23, 2023, performance testing must be conducted for each affected source subject to an applicable emissions limitation in tables 1 and 2 to this subpart that has not had a performance test within the last 5 years, except as described in paragraph (c)(6) of this section. Thereafter, subsequent performance tests for each affected source must be completed no less frequently than every 5 years from the date the emissions source was last tested.

(5) In lieu of conducting subsequent performance tests for each affected source, you may elect to group similar affected sources together and conduct subsequent performance tests on one representative affected source within each group of similar affected sources. The determination of whether affected sources are similar must meet the criteria in paragraph (c)(5)(i) of this section. If you decide to test representative affected sources, you must prepare and submit a testing plan as described in paragraph (c)(5)(iii) of this section.

(i) If you elect to test representative affected sources, the affected sources that are grouped together must be of the same process type (*e.g.,* grid casting, paste mixing, three-process operations) and also have the same type of air pollution control device (*e.g.,* fabric filters). You cannot group affected sources from different process types or with different air pollution control device types together for the purposes of this section.

(ii) The results of the performance test conducted for the affected source selected as representative of a group of similar affected sources will represent the results for each affected source within the group. In the performance test report, all affected sources in the group will need to be listed.

(iii) If you plan to conduct subsequent performance tests on representative emission units, you must submit a test plan. This test plan must be submitted to the Administrator or delegated authority for review and approval no later than 90 days prior to the first scheduled performance test. The test plan must contain the information specified in paragraphs (c)(5)(iii)(A) through (C) of this section.

(A) A list of all emission units. This list must clearly identify all emission units that have been grouped together as similar emission units. Within each group of emission units, you must identify the emission unit that will be the representative unit for that group and subject to performance testing.

(B) A list of the process type and type of air pollution control device on each emission unit.

(C) A date of last test for each emission unit and a schedule indicating when you will conduct performance tests for each emission unit within the representative groups.

(iv) If you conduct subsequent performance tests on representative emission units, the unit with the oldest test must be tested first, and each subsequent performance test must be performed for a different unit until all units in the group have been tested. The order of testing for each subsequent test must proceed such that the unit in the group with the least recent performance test is the next unit to be tested.

(6) You may not conduct performance tests during periods of malfunction. You must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. You must make available to the Administrator in the test report, records as may be necessary to determine the conditions of performance tests.

(d) Beginning no later than the applicable compliance date specified in § 63.11422(f) or (i), you must prepare and, at all times, operate according to a fugitive dust mitigation plan that describes in detail the measures that will be put in place and implemented to control fugitive dust emissions in the lead oxide unloading and storage areas. You must prepare a fugitive dust mitigation plan according to the requirements in paragraphs (d)(1) and (2) of this section.

(1) You must submit the fugitive dust mitigation plan to the Administrator or delegated authority for review and approval when initially developed and any time changes are made.

(2) The fugitive dust mitigation plan must at a minimum include the requirements specified in paragraphs (d)(2)(i) through (iv) of this section.

(i) *Cleaning lead oxide unloading and storage areas.* Surfaces traversed during vehicular material transfer activity in

lead oxide unloading and storage areas must be cleaned at least once per month, by wet wash or a vacuum equipped with a filter rated by the manufacturer to achieve 99.97 percent capture efficiency for 0.3 micron particles in a manner that does not generate fugitive lead dust, except when sand or a similar material has been spread on the area to provide traction on ice or snow.

(ii) *Spills in lead oxide unloading and storage areas.* For any leak or spill that occurs during the unloading and storage process, complete washing or vacuuming the area to remove all spilled or leaked lead bearing material within 2 hours of the leak or spill occurrence.

(iii) *Materials storage.* Dust forming materials (that contain lead or lead compounds) must be stored in sealed, leak-proof containers or in a total enclosure.

(iv) *Records.* The fugitive dust mitigation plan must specify that records be maintained of all cleaning performed under paragraph (d)(2)(i) and (ii) of this section.

(e) Beginning no later than the applicable compliance date specified in § 63.11422(g) or (i), you must meet the monitoring requirements in paragraphs (e)(1) through (5) of this section.

(1) For any emissions point controlled by a scrubbing system, you must install, calibrate, maintain, and operate a monitoring device(s) that measures and records the liquid flow rate and pressure drop across the scrubbing system(s) at least once every 15 minutes. The monitoring device must have an accuracy of ±5 percent over its operating range. The operating liquid flow rate must be maintained within ±10 percent of the average liquid flow rate during the most recent performance test. If a liquid flow rate or pressure drop is observed outside of the normal operational ranges as you must record the incident and take immediate corrective actions. You must also record the corrective actions taken. You must submit an excess emissions and continuous monitoring system performance report and summary report required under § 63.11424(c).

(2) Emissions points controlled by a fabric filter without a secondary filter must meet the requirements of paragraphs (e)(2)(i) and (ii) of this section and either paragraph (e)(2)(iii) or (iv) of this section.

(i) You must perform quarterly inspections and maintenance to ensure proper performance of each fabric filter. This includes inspection of structural and filter integrity.

(ii) If it is not possible for you to take the corrective actions specified in paragraph (e)(2)(iii)(C) or (D) of this section for a process or fabric filter control device, you must keep at least one replacement fabric filter onsite at all times for that process or fabric filter control device. The characteristics of the replacement filters must be the same as the current fabric filters in use or have characteristics that would achieve equal or greater emission reductions.

(iii) Install, maintain, and operate a pressure drop monitoring device to measure the differential pressure drop across the fabric filter during all times when the process is operating. The pressure drop must be recorded at least twice per day (at least 8 hours apart) if the results of the most recent performance test indicate that emissions are greater than 50 percent of the lead emissions limit in table 1 to this subpart. The pressure drop must be recorded at least once per day if the results of the most recent performance test indicate that emissions are less than or equal to 50 percent of the lead emissions limit in table 1. If a pressure drop is observed outside of the normal operational ranges, you must record the incident and take immediate corrective actions. You must submit an excess emissions and continuous monitoring system performance report and summary report required under § 63.11424(c). You must also record the corrective actions taken and verify pressure drop is within normal operational range. These corrective actions may include but are not limited to those provided in paragraphs (e)(2)(iii)(A) through (D) of this section.

(A) Inspecting the filter and filter housing for air leaks and torn or broken filters.

(B) Replacing defective filter media, or otherwise repairing the control device.

(C) Sealing off a defective control device by routing air to other control devices.

(D) Shutting down the process producing the lead emissions.

(iv) Conduct a visible emissions observation using EPA Method 9 or EPA Method 22 of appendix A to 40 CFR part 60 while the process is in operation to verify that no visible emissions are occurring at the discharge point to the atmosphere from any emissions source subject to the requirements of paragraph (a) of this section. The visible emissions observation must be conducted at least twice daily (at least 6 hours apart) if the results of the most recent performance test indicate that emissions are greater than 50 percent of the lead emissions limit in table 1 to this subpart. The visible emissions observation must be conducted at least once per day if the results of the most recent performance test indicate that emissions are less than or equal to 50 percent of the lead emissions limit in table 1. If visible emissions are detected, you must record the incident and submit this information in an excess emissions and continuous monitoring system performance report and summary report required under § 63.11424(c) and take immediate corrective action. You must also record the corrective actions taken. These corrective actions may include but are not limited to those provided in paragraphs (e)(2)(iii)(A) through (D) of this section.

(3) Emissions points controlled by a fabric filter equipped with a secondary filter, such as a HEPA filter, must meet the requirements of paragraphs (e)(3)(i) and (ii) of this section and either paragraph (e)(3)(iii) or (iv) of this section.

(i) You must perform the inspections required in paragraph (e)(2)(i) of this section quarterly.

(ii) If it is not possible for you to take the corrective actions specified in paragraph (e)(2)(iii)(C) or (D) of this section for a process or fabric filter control device, you must keep at least one replacement primary fabric filter and one replacement secondary filter onsite at all times for that process or fabric filter control device. The characteristics of the replacement filters must be the same as the current fabric filters in use or have characteristics that would achieve equal or greater emission reductions.

(iii) You must perform the pressure drop monitoring requirements in paragraph (e)(2)(iii) of this section. You may perform these requirements once weekly rather than once or twice daily.

(iv) You must perform the visible emissions observation requirements in paragraph (e)(2)(iv) of this section. You may perform these requirements weekly rather than once or twice daily.

(4) Beginning no later than the applicable compliance date specified in § 63.11422(g) or (i), if you operate a bag leak detection system, that system must meet the specifications and requirements in paragraphs (e)(4)(i) through (ix) of this section. Emission points controlled by a fabric filter equipped that are monitored with a bag leak detection system meeting the specifications and requirements in paragraphs (e)(4)(i) through (ix) of this section may have the inspections required in paragraph (e)(2)(i) of this section performed semiannually.

(i) The bag leak detection system must be certified by the manufacturer to be

capable of detecting particulate matter as lead emissions at concentrations at or below the values in table 1 to this subpart, as applicable to the process for which the fabric filter is used to control emissions. Where the fabric filter is used as a control device for more than one process, the lowest applicable value in table 1 must be used.

(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 alarm when an increase in relative particulate loadings is detected over a preset level.

(iv) You must install and operate the bag leak detection system in a manner consistent with the guidance provided in ''Office of Air Quality Planning and Standards (OAQPS) Fabric Filter Bag Leak Detection Guidance'' (EPA–454/R–98–015) (incorporated by reference, see § 63.14) and the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system must, 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, you must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in the approved standard operating procedures manual required under paragraph (e)(4)(ix) of this section. You cannot increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection that demonstrates that the fabric filter is in good operating condition.

(vii) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, you must install the bag leak detector downstream of the fabric filter.

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

(ix) You must develop a standard operating procedures manual for the bag leak detection system that includes procedures for making system adjustments and a corrective action plan, which specifies the procedures to be followed in the case of a bag leak detection system alarm. The corrective action plan must include, at a minimum, the procedures that you will use to determine and record the time and cause of the alarm as well as the corrective actions taken to minimize emissions as specified in paragraphs (e)(4)(ix)(A) and (B) of this section.

(A) The procedures used to determine the cause of the alarm must be initiated within 30 minutes of the alarm.

(B) The cause of the alarm must be alleviated by taking the necessary corrective action(s) that may include, but not be limited to, those listed in paragraphs (e)(4)(ix)(B)(*1*) through (*6*) of this section.

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

(*2*) Sealing off defective bags or filter media.

(*3*) Replacing defective bags or filter media, or otherwise repairing the control device.

(*4*) Sealing off defective baghouse compartment.

(*5*) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(*6*) Shutting down the process producing the lead emissions.

(5) For continuous monitoring subject to the requirements of § 63.8(d)(2) to develop and implement a continuous monitoring system quality control program, you must keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, you must keep previous (*i.e.,* superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. The program of corrective action should be included in the plan required under § 63.8(d)(2).

■ 11. Section 63.11424 is added to read as follows:

§ 63.11424 What are the recordkeeping and reporting requirements for this subpart?

(a) You must keep the records specified in this section according to the applicable compliance date in § 63.11422(f) and (g) or (i) and maintain them in a format readily available for review onsite for a period of 5 years.

(1) Records of pressure drop values and the liquid flow rate from the monitoring required in § 63.11423(e)(1) for scrubbing systems.

(2) Records of fabric filter inspections and maintenance activities required in § 63.11423(e)(2)(i) or (e)(3)(i).

(3) Records required under § 63.11423(e)(2)(iii) or (e)(3)(iii) of fabric filter pressure drop, pressure drop observed outside of normal operating ranges as specified by the manufacturer, and corrective actions taken.

(4) Records of the required visible emissions observations in § 63.11423(e)(2)(iv) or (e)(3)(iv).

(5) You must keep the records of failures to meet an applicable standard in this part as specified in paragraphs (a)(5)(i) through (iii) of this section.

(i) In the event that an affected unit fails to meet an applicable standard in this part, record the number of failures. For each failure record the date, time, cause, and duration of each failure.

(ii) For each failure to meet an applicable standard in this part, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.

(iii) Record actions taken to minimize emissions and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(6) If a bag leak detection system is used under § 63.11423(e)(4), for a period of 5 years keep the records, specified in paragraphs (a)(6)(i) through (iii) of this section.

(i) Electronic records of the bag leak detection system output.

(ii) An identification of the date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the corrective actions taken, and the date and time the cause of the alarm was corrected.

(iii) All records of inspections and maintenance activities required under § 63.11423(e)(4).

(7) Records of all cleaning required as part of the practices described in the fugitive dust mitigation plan required under § 63.11423(d)(2)(iii) for the control of fugitive dust emissions.

(b) Beginning on April 24, 2023, within 60 days after the date of completing each performance test or demonstration of compliance required by this subpart, you must submit the results of the performance test following the procedures specified in § 63.9(k) and paragraphs (b)(1) through (3) of this section.

(1) *Data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website (https://*

www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert) at the time of the test. Submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). The data must be submitted in a file format generated using the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website.

(2) *Data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test.* The results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI. If a performance test consists only of opacity measurements, reporting using the ERT and CEDRI is not required.

(3) *Data collected containing confidential business information (CBI).* All CBI claims must be asserted at the time of submission. Do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot later be claimed CBI. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim for some of the information submitted under paragraph (b)(1) or (2) of this section, you must submit a complete file, including information claimed to be CBI, to the EPA. The file must be generated using the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. The preferred method to submit CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol (FTP), or other online file sharing services (*e.g.,* Dropbox, OneDrive, Google Drive). Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address *oaqpscbi@epa.gov,* and as described in this paragraph (b)(3), should include clear CBI markings and note the docket ID. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email *oaqpscbi@epa.gov* to request a file transfer link. If sending CBI information through the postal service, submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. EPA/OAQPS/CORE CBI Office, Attention: Lead Acid Battery Manufacturing Sector Lead, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described in paragraphs (b)(1) and (2) of this section. Under CAA section 114(c), emissions data is not entitled to confidential treatment, and the EPA is required to make emissions data available to the public. Thus, emissions data will not be protected as CBI and will be made publicly available.

(c) Beginning on February 23, 2024, or once the report template for this subpart has been available on the CEDRI website for one year, whichever date is later, you must submit a report of excess emissions and monitoring systems performance report and summary report according to §§ 63.9(k) and 63.10(e)(3) to the Administrator semiannually. Report the number of failures to meet an applicable standard in this part. For each instance, report the date, time, cause, and duration of each failure. For each failure, the report must include a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions. You must use the appropriate electronic report template on the CEDRI website (*https://www.epa.gov/electronic-reporting-air-emissions/cedri*) or an alternate electronic file consistent with the XML schema listed on the CEDRI website for this subpart. The date report templates become available will be listed on the CEDRI website. Unless the Administrator or delegated state agency or other authority has approved a different schedule for submission of reports, the report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted. Submit all reports to the EPA via CEDRI, which can be accessed through the EPA's CDX (*https://cdx.epa.gov/*). The EPA will make all the information submitted through CEDRI available to the public without further notice to you. Do not use CEDRI to submit information you claim as CBI. Anything submitted using CEDRI cannot later be claimed CBI. The report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted. Although we do not expect persons to assert a claim of CBI, if you wish to assert a CBI claim, follow the requirements specified in paragraph (b)(3) of this section. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph (c).

(d) Any records required to be maintained by this subpart that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.

■ 12. Section 63.11425 is amended by revising paragraph (a) to read as follows:

§ 63.11425 What General Provisions apply to this subpart?

(a) The provisions in subpart A of this part, that are applicable to this subpart are specified in table 3 to this subpart.

* * * * *

■ 13. Section 63.11426 is revised to read as follows:

§ 63.11426 What definitions apply to this subpart?

The terms used in this subpart are defined in the CAA, in § 63.2 for terms used in the applicable provisions of subpart A of this part, and in this section as follows:

Bag leak detection system means a system that is capable of continuously monitoring particulate matter (dust) loadings in the exhaust of a fabric filter (baghouse) in order to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Grid casting facility means a facility which includes all lead melting pots, pots that remelt scrap from onsite lead acid battery manufacturing processes, and machines used for casting the grid used in lead acid batteries.

Lead acid battery component manufacturing plant means any plant that does not produce a final lead acid battery product but at which one or more of the following processes is conducted to develop a product for use in lead acid batteries: grid casting, paste mixing, three-process operations, and lead oxide manufacturing.

Lead acid battery manufacturing plant means any plant that produces a storage battery using lead and lead compounds for the plates and sulfuric acid for the electrolyte.

Lead oxide manufacturing facility means a facility that produces lead oxide from lead for use in lead acid batteries, including lead oxide production and product recovery

operations. Local exhaust ventilation or building ventilation exhausts serving lead oxide production areas are not part of the lead oxide manufacturing facility.

Lead reclamation facility means a facility that casts remelted lead scrap generated by onsite lead acid battery manufacturing processes into lead ingots for use in the battery manufacturing process, and which is not a furnace affected under subpart X of this part. Lead scrap remelting processes that are used directly (not cast into an ingot first) in a grid casting facility or a three-process operations facility are parts of those facilities and are not part of a lead reclamation facility.

Other lead-emitting operation means any operation at a plant involved in the manufacture of lead acid batteries from which lead emissions are collected and ducted to the atmosphere and which is not part of a grid casting, lead oxide manufacturing, lead reclamation, paste mixing, or three-process operation facility, or a furnace affected under subpart X of this part. These operations also include local exhaust ventilation or building ventilation exhausts serving lead oxide production areas.

Paste mixing facility means a facility including lead oxide storage, conveying, weighing, metering, and charging operations; paste blending, handling, and cooling operations; and plate pasting, takeoff, cooling, and drying operations.

Three-process operation facility means a facility including those processes involved with plate stacking, burning or strap casting, and assembly of elements into the battery case.

Total enclosure means a containment building that is completely enclosed with a floor, walls, and a roof to prevent exposure to the elements and that has limited openings to allow access and egress for people and vehicles.

■ 14. Section 63.11427 is amended by revising paragraph (b) introductory text and adding paragraph (b)(5) to read as follows:

§ 63.11427 Who implements and enforces this subpart?

* * * * *

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the approval authorities contained in paragraphs (b)(1) through (5) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

* * * * *

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

■ 15. Table 1 to subpart PPPPPP of part 63 is revised to read as follows:

Table 1 to Subpart PPPPPP of Part 63—Emission Limits

As stated in § 63.11423(a)(2), you must comply with the emission limits in the following table:

For . . .	You must . . .
1. Each new or existing grid casting facility	Emit no more than 0.08 milligram of lead per dry standard cubic meter of exhaust (0.000035 gr/dscf).
2. Each new or existing paste mixing facility	Emit no more than 0.1 milligram of lead per dry standard cubic meter of exhaust (0.0000437 gr/dscf); or emit no more than 0.9 gram of lead per hour (0.002 lbs/hr) total from all paste mixing operations.
3. Each new or existing three-process operation facility.	Emit no more than 1.0 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).
4. Each new or existing lead oxide manufacturing facility.	Emit no more than 5.0 milligram of lead per kilogram of lead feed (0.010 lb/ton).
5. Each new or existing lead reclamation facility	Emit no more than 0.45 milligram of lead per dry standard cubic meter of exhaust (0.000197 gr/dscf).
6. Each new or existing other lead-emitting operation.	Emit no more than 1.0 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

■ 16. Table 2 to subpart PPPPPP of part 63 is added to read as follows:

Table 2 to Subpart PPPPPP of Part 63—Opacity Standards

As stated in § 63.11423(a)(2), you must comply with the opacity standards in the following table:

For . . .	Any gases emitted must not exceed . . .
1. Each new or existing facility other than a lead reclamation facility.	0 percent opacity (measured according to EPA Method 9 of appendix A to 40 CFR part 60 and rounded to the nearest whole percentage or measured according to EPA Method 22 of appendix A to 40 CFR part 60).
2. Each new or existing lead reclamation facility	5 percent opacity (measured according to EPA Method 9 and rounded to the nearest whole percentage).

■ 17. Table 3 to subpart PPPPPP of part 63 is added to read as follows:

Table 3 to Subpart PPPPPP of Part 63—Applicability of General Provisions to This Subpart

As required in § 63.11425, you must comply with the requirements of the NESHAP General Provisions (subpart A of this part) as shown in the following table.

Citation	Subject	Applies to this subpart?	Explanation
63.1	Applicability	Yes	
63.2	Definitions	Yes	
63.3	Units and Abbreviations		
63.4	Prohibited Activities and Circumvention	Yes	
63.5	Preconstruction Review and Notification Requirements.	No	
63.6(a) through (d)	Compliance with Standards and Maintenance Requirements.	Yes	
63.6(e)(1)(i)	General Duty to Minimize Emissions	No	Section 63.11423(a)(3) specifies general duty requirements.
63.6(e)(1)(ii)	Requirement to correct malfunctions as soon as possible.	No	
63.6(e)(1)(iii)	Enforceability of requirements independent of other regulations.	Yes	
63.6(e)(3)	SSM Plans	No	This subpart does not require a startup, shutdown, and malfunction plan.
63.6(f)(1)	Compliance Except During SSM	No	
63.6(f)(2) and (3)	Methods for determining compliance	Yes	
63.6(g)	Use of an alternative nonopacity emission standard.	Yes	
63.6(h)(1)	SSM Exemption	No	
63.6(h)(2) through (9), (i) through (j)	Compliance with opacity/visible emission standards, compliance extensions and exemptions.	Yes	
63.7(a) through (d), (e)(2) and (3), (f) through (h).	Performance Testing Requirements	Yes	
63.7(e)(1)	Conditions for conducting performance tests.	No	Requirements for performance test conditions are found in § 63.11423(c)(7).
63.8(a), (b), (c)(1)(ii), (d)(1) and (2), (e) through (g).	Monitoring Requirements	Yes	
63.8(c)(1)(i)	General duty to minimize emissions and CMS operation.	No	Section 63.11423(a)(3) specifies general duty requirements.
63.8(c)(1)(iii)	Requirement to develop SSM Plan for CMS.	No	
63.8(d)(3)	Written procedures for CMS	No	
63.9	Notification Requirements	Yes	
63.10(a), (b)(1), (b)(2)(iii), (b)(2)(vi) through (ix), (b)(3), (c)(1) through (14), (d)(1) through (4), (e), (f).	Recordkeeping and Reporting Requirements.	Yes	
63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups and shutdowns.	No	
63.10(b)(2)(ii)	Recordkeeping of failures to meet a standard.	No	Section 63.11424(a)(5) specifies these requirements.
63.10(b)(2)(iv) and (v)	Actions taken to minimize emissions during SSM.	No	
63.10(c)(15)	Use of SSM Plan	No	
63.10(d)(5)		No	This subpart does not require a startup, shutdown, and malfunction plan. See § 63.11424(c) for excess emissions reporting requirements.
63.11	Control Device Requirements	No	This subpart does not require flares.
63.12	State Authorities and Delegations	Yes	
63.13	Addresses	Yes	
63.14	Incorporations by Reference	Yes	
63.15	Availability of Information and Confidentiality.	Yes	
63.16	Performance Track Provisions	Yes	
63.1(a)(5), (a)(7) through (9), (b)(2), (c)(3), (d), 63.6(b)(6), (c)(3) and (4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2) through (4), (c)(9).	Reserved	No	

[FR Doc. 2023–02989 Filed 2–22–23; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 60, 63, and 266

[EPA–HQ–OAR–2016–0677; FRL–5937–02–OAR]

RIN 2060–AT09

EPA Method 23—Determination of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans From Stationary Sources

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes editorial and technical revisions to the Environmental Protection Agency's (EPA's) Method 23 (Determination of Polychlorinated Dibenzo-*p*-Dioxins, Polychlorinated Dibenzofurans, and Polycyclic Aromatic Hydrocarbons from Stationary Sources). Final revisions include incorporating true, comprehensive, and stable isotope dilution for quantifying target compounds using corresponding carbon-13 labeled compounds for each target compound including most of the polycyclic aromatic hydrocarbons (PAH) and changing the method quality control from the current prescriptive format to a more flexible performance-based approach with specified performance criteria. We are also finalizing revisions that expand the list of target compounds of Method 23 to include PAH and polychlorinated biphenyls (PCB). The final revisions allow facilities and their test teams flexibility when sampling and measuring polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/PCDF), PAH, and PCB from stationary sources with a comprehensive isotope dilution method while ensuring that the stack testing community can consistently implement the method across emissions sources and facilities.

DATES: This final rule is effective on March 20, 2023. The incorporation by reference (IBR) of certain publications listed in the rule is approved by the Director of the Federal Register as of March 20, 2023.

ADDRESSES: The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA–HQ–OAR–2016–0677. All documents in the docket are listed on the *https://www.regulations.gov* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *https://www.regulations.gov* or in hard copy at the EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are closed to the public, with limited exceptions, to reduce the risk of transmitting Coronavirus 2019 (COVID–19). Our Docket Center staff will continue to provide remote customer service via email, phone, and webform.

FOR FURTHER INFORMATION CONTACT: For further questions about this final action, contact Dr. Raymond Merrill, Office of Air Quality Planning and Standards (OAQPS), Air Quality Assessment Division (AQAD), Environmental Protection Agency, Research Triangle Park, NC 27711; mail drop E143–02; telephone number: (919) 541–5225; fax number: (919) 541–0516; email address: *merrill.raymond@epa.gov.*

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. We use multiple acronyms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

AQAD Air Quality Assessment Division
ASTM American Society for Testing and Materials International
CAA Clean Air Act
CARB California Environmental Protection Agency Air Resources Board
CCV continuing calibration verification
CFR Code of Federal Regulations
EDL estimated detection limit
EPA U.S. Environmental Protection Agency
FR Federal Register
GC gas chromatograph
HRGC high-resolution gas chromatography
HRMS high-resolution mass spectrometry
IBR incorporation by reference
IDC initial demonstration of capability
MDL method detection limit
MS mass spectrometer
NTTAA National Technology Transfer and Advancement Act
OAQPS Office of Air Quality Planning and Standards
OLEM Office of Land and Emergency Management
OMB Office of Management and Budget
OW Office of Water
PAH polycyclic aromatic hydrocarbons
PCB polychlorinated biphenyls
PCDD polychlorinated dibenzo-*p*-dioxins
PCDPE polychlorinated diphenyl ethers
PCDPF polychlorinated dibenzofurans
PRA Paperwork Reduction Act
QCS Quality Control Sample
RFA Regulatory Flexibility Act
RRF relative response factor
SVOC semivolatile organic compounds
SW solid waste
TTN Technology Transfer Network
UMRA Unfunded Mandates Reform Act

Organization of this document. The information in this preamble is organized as follows:

I. General Information
A. Does this final action apply to me?
B. Where can I get a copy of this document and other related information?
C. Judicial Review
II. Background
III. Incorporation by Reference
IV. Summary of Revisions to Method 23
A. Section 1.0 Scope and Application
B. Section 2.0 Summary of Method
C. Section 3.0 Definitions
D. Section 4.0 Interferences
E. Section 5.0 Safety
F. Section 6.0 Equipment and Supplies
G. Section 7.0 Reagents, Media, and Standards
H. Section 8.0 Sample Collection, Preservation, and Storage
I. Section 9.0 Quality Control
J. Section 10.0 Calibration and Standardization
K. Section 11.0 Analysis Procedure
L. Section 12.0 Data Analysis and Calculations
M. Section 13.0 Method Performance
N. Section 14.0 Pollution Prevention
O. Section 15.0 Waste Management
P. Section 16.0 Bibliography
Q. Section 17.0 Tables, Diagrams, Flow Charts, and Validation Data
V. Summary of Final Revisions Related to 40 CFR Parts 60, 63, and 266
A. 40 CFR Part 60—Standards of Performance for New Stationary Sources
B. 40 CFR Part 63—National Emission Standards for Hazardous Air Pollutants for Source Categories
C. 40 CFR Part 266—Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
VI. Statutory and Executive Order Reviews
A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
B. Paperwork Reduction Act (PRA)
C. Regulatory Flexibility Act (RFA)
D. Unfunded Mandates Reform Act (UMRA)
E. Executive Order 13132: Federalism
F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer and Advancement Act (NTTAA)
J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

K. Congressional Review Act (CRA)
L. Determination Under Clean Air Act Section 307(d)

I. General Information

A. Does this final action apply to me?

The final amendments to Method 23 apply to stationary sources that are subject to certain provisions of 40 CFR parts 60, 62, 63, 79, and 266. The source categories and entities potentially affected are listed in Table 1 of this preamble. This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. This table lists the types of entities that EPA is now aware could potentially be affected by this action. Other types of entities not listed in the table could also be affected.

TABLE 1—POTENTIALLY AFFECTED SOURCE CATEGORIES

Category	NAICS [a]	Examples of regulated entities
Industry	332410	Fossil fuel steam generators.
	332410	Industrial, commercial, institutional steam generating units.
	562213	Municipal Waste Combustors.
	322110	Hazardous Waste Combustors.
	325211	Polyvinyl Chloride Resins Manufacturing.
	327310	Portland cement plants.
	324122	Asphalt Shingle and Coating Materials Manufacturing.
	331314	Secondary aluminum plants.
	327120	Clay Building Material and Refractories Manufacturing.
	331410	Nonferrous Metal (except Aluminum) Smelting and Refining.

[a] North American Industry Classification System.

If you have any questions regarding the applicability of the final changes to Method 23, contact the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. Where can I get a copy of this document and other related information?

The docket number for this action is Docket ID No. EPA–HQ–OAR–2016–0677. In addition to being available in the docket, an electronic copy of the final method revisions is available on the Technology Transfer Network (TTN) website at *https://www.epa.gov/ttn/emc/methods/*. The TTN provides information and technology exchange in various areas of air pollution control.

C. Judicial Review

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by May 19, 2023. Moreover, under section 307(b)(2) of the CAA, the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce these requirements. Section 307(d)(7)(B) of the CAA further provides that ''[o]nly an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.'' This section also provides a mechanism for the EPA to convene a proceeding for reconsideration, ''[i]f the person raising an objection can demonstrate to the EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment, (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.'' Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

The EPA's Method 23 (Determination of Polychlorinated Dibenzo-*p*-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources) is EPA's current reference test method used to determine the amount of polychlorinated dibenzo-*p*-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) emitted from stationary sources.

The EPA promulgated Method 23 (Appendix A of 40 Code of Federal Regulations (CFR) Part 60, Test Methods) on February 13, 1991 (56 FR 5758). Since promulgation, the ability to measure PCDD and PCDF has evolved as analytical laboratories, EPA, and state entities have developed new standard operating procedures and methods to reflect improvements in sampling and analytical techniques. Examples of newer PCDD/PCDF methods include:

- Office of Land and Emergency Management (OLEM) Solid Waste (SW) SW–846 EPA Method 8290A, Polychlorinated Dibenzo-*p*-Dioxins and Polychlorinated Dibenzofurans (PCDF) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS).
- Office of Water (OW) EPA Method 1613, Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS.
- California Environmental Protection Agency Air Resources Board (CARB) Method 428, Determination of Polychlorinated Dibenzo-*p*-Dioxin (PCDD), Polychlorinated Dibenzofuran (PCDF), and Polychlorinated Biphenyls Emissions from Stationary Sources.

Beginning in 2016, the EPA held a series of informal discussions with stakeholders to identify technical issues related to the sampling and analysis of PCDD and PCDF and potential revisions to Method 23. The stakeholders consisted of a cross section of interested parties including representatives from state regulatory entities, various EPA offices, analytical laboratories, regulated sources, emission testing firms, analytical standards vendors, instrument vendors, and others with experience in sampling and analysis of PCDD and PCDF and with the equipment, materials, and performance of Method 23 and other PCDD/PCDF methods. In the discussions, EPA also sought stakeholder input regarding their experience combining procedures for sampling and analysis of PCDD and PCDF with procedures for sampling and analysis of PAH and PCB emitted from

stationary sources. The docket contains summaries of the stakeholder discussions. EPA proposed editorial and technical revisions to Method 23 on January 14, 2020 (85 FR 2234). EPA received comments on the proposed revisions to the method and has addressed these in a separate response to comments document, the *Summary of Public Comments and Responses for the Proposed EPA Method 23—Determination of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans from Stationary Sources.* This final action summarizes the changes made in response to comments.

III. Incorporation by Reference

The EPA is incorporating by reference American Society for Testing and Materials (ASTM) D6911–15 and ASTM D4840–99(2018)e1 in Method 23. ASTM D6911–15 includes a guide for packaging and shipping environmental samples for laboratory analysis and ASTM D4840–99(2018)e1 includes a standard guide for sample chain-of-custody procedures. These standards were developed and adopted by ASTM International and may be obtained from *https://www.astm.org* or from the American Society for Testing and Materials 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959.

IV. Summary of Revisions to Method 23

In this action, we are finalizing technical revisions and editorial changes to clarify and update the requirements and procedures specified in Method 23 and reformatting the method to conform with the current EPA method format (see *https://www.epa.gov/measurements-modeling/method-development#format*). We are also expanding the applicability of Method 23 to include procedures for sampling and analyzing PAH and PCB. In addition, we are finalizing revisions to various sections of the CFR that either require Method 23 or require the analysis of PCDD/PCDF, PAH, or PCB.

Our intent for the final revisions is to ensure that Method 23 is implemented consistently. EPA has updated the method procedures to include many current best practices. We have added flexibility to the method based on meeting quality control requirements.

The primary focus of the final revisions to Method 23 is to change the method from a prescriptive method to a method which allows users to have flexibility in implementing the method (*e.g.,* choice of gas chromatograph (GC) column, the procedures used for sample cleanup) while still meeting performance criteria that the EPA believes are necessary for demonstrating and documenting the quality of the measurements for the target compounds. The final revisions also address concerns over recovery of target compounds from particulate matter by requiring a pre-extraction filter recovery standard procedure and acceptance criteria for the pre-extraction filter recovery standard recovery as a tool to evaluate filter extraction. These new requirements resolve the concerns that led to the criteria in 40 CFR 63.1208 that required Administrator approval prior to use of Method 23 for measurement of PCDD/PCDF.

The EPA's second focus for the final revisions is to modify the method to allow isotope dilution with isotopically labeled compounds for each target compound. Quantitation is based on isotope dilution, moving from nine to 17 labeled compounds for 17 target toxic 2,3,7,8-substituted PCDD/PCDF. These revisions to the method are possible because additional isotopically labeled standards for the target compounds have become available from vendors since the original promulgation of Method 23. The final revisions eliminate biases with recovery correction based on individual corresponding labeled compounds.

The third major focus for the EPA's final revisions to Method 23 is to include options for combining sampling and analysis of PCDD/PCDF with sampling and analysis of PAH and PCB to allow the measurement of these toxic semivolatile organic compounds (SVOC). Therefore, PCB and PAH were added to the list of target compounds measured by Method 23.

The EPA's final amendments to Method 23 in response to public comments are presented below for each section of Method 23. The proposed revisions to sections of Method 23 that EPA is not changing based on public comments are finalized as proposed. A summary of public comments and our responses are provided in a separate response to comments document in the docket for this action.

A. Section 1.0 Scope and Application

In this action, EPA is renaming Section 1.0 from ''Applicability and Principle'' to ''Scope and Application,'' and revising the text to expand the target compounds for Method 23 to include PCB and PAH. We are also adding statements that emphasize the need for working knowledge of the EPA Methods 1 through 5 of Appendices A–1, A–2, and A–3 to 40 CFR part 60, isotope dilution, and the use of high-resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS) when applying Method 23. We are also adding language to specify that Method 23 is performance-based and allows users to modify parts of the method to overcome interferences or to substitute alternative materials and equipment provided that all performance criteria in the method are met.

B. Section 2.0 Summary of Method

The EPA is renaming Section 2.0 from ''Apparatus'' to ''Summary of Method,'' and revising Section 2.0 to provide an overview of the method's sampling and analytical procedures. We are also moving the current language in Section 2.0, which describes the materials needed to conduct Method 23, to a new Section 6.0 (Equipment and Supplies).

C. Section 3.0 Definitions

The current version of Method 23 does not include definitions of key terms and variables used in Method 23. In this action, we are adding a new Section 3.0 titled ''Definitions.'' We are defining acronyms and technical terms to improve the clarity of the method principles and procedures. We are also moving language from the current Section 3.0 to a new Section 7.0 (Reagents, Media, and Standards).

D. Section 4.0 Interferences

The current version of Method 23 does not discuss the conditions that can potentially interfere with measurements obtained using the method. In this action, we are adding a new Section 4.0 titled ''Interferences,'' that presents the potential causes and recommendations for avoiding or mitigating interferences or sample contamination. We are stating that enhanced selectivity, or confidence in the data, is based on the fractionation, GC separation, HRMS sensitivity, and monitoring for polychlorinated diphenyl ether (PCDPE) interferences. We are also moving language from the current Section 4.0 to a new Section 8.0 (Sample Collection, Preservation, and Storage).

E. Section 5 Safety

Currently, Method 23 does not provide procedures for safety. In this action, we are adding a new Section 5.0 titled ''Safety,'' that presents the health hazards and procedures for minimizing risks to field and laboratory personnel when conducting Method 23. We are also moving language from the current Section 5.0 to a new Section 11.0 (Analysis Procedure).

F. Section 6.0 Equipment and Supplies

In this action, we are renumbering and moving the current language in Section 2.0 (Apparatus) to a new

Section 6.0 titled ''Equipment and Supplies,'' and making clarifying edits and technical revisions to the specifications in Section 6.0. Table 2 of this preamble identifies the new numbering for the subsections currently in Section 2.0 and Table 3 of this preamble identifies new specifications (and the associated subsection) we are including in Section 6.0.

TABLE 2—CROSSWALK FOR REVISIONS TO CURRENT METHOD SECTIONS

Description	Current section	Revised section
Filter holder	2.1.1	6.1.3
Condenser	2.1.2	6.1.7
Water circulating bath	2.1.3	6.1.8
Adsorbent module	2.1.4	6.1.9
Fitting caps	2.2.1	6.2.1
Wash bottles	2.2.2	6.2.2
Filter storage container	2.2.4	6.2.4
Field balance	2.2.5	6.2.5
Aluminum foil	2.2.6	6.2.6
Glass sample storage container	2.2.9	6.2.8
Extraction thimble	2.3.4	6.3.3.3
Pasteur pipettes	2.3.5	6.4.1
GC oven	2.3.10.1	6.5.1.1
GC Temperature monitor	2.3.10.2	6.5.1.2
GC Flow system	2.3.10.3	6.5.1.3
Capillary GC column	2.3.10.4	6.5.2
Mass spectrometer (MS)	2.3.11	6.5.3
MS data system	2.3.12	6.5.4

TABLE 3—ADDITIONAL SPECIFICATIONS FOR SECTION 6.0

Description	Revised section
Probe liner	6.1.2
Filter heating system	6.1.4
Filter temperature sensor	6.1.5
Sample transfer line	6.1.6
Impingers	6.1.10
Soxhlet extraction apparatus	6.3.3.1
Moisture trap of extraction apparatus	6.3.3.2
Heating mantle	6.3.3.4
Kuderna-Danish concentrator	6.3.4
Liquid chromatography columns	6.4.2
GC Injection port	6.5.1.4
PCDD/PCDF GC column	6.5.2.1
PAH GC column	6.5.2.2
PCB GC column	6.5.2.3

In Section 6, we are also finalizing changes to:

- Prohibit the use of brominated flame-retardant coated tape in assembling the sampling train and use of silicon tubing in direct contact with flue gases to avoid sample contamination.
- Revise the specification for a rotary evaporator with a note to use a Kuderna-Danish concentrator for PCB and PAH to avoid the loss of higher vapor pressure target compounds.
- Remove specifications for the graduated cylinder to improve the accuracy of moisture measurements and make Method 23 more consistent with other isokinetic sampling methods.
- Remove the volume requirement for wash bottles to allow greater flexibility in field sample recovery.

We are also moving language from Method 23's current Section 6.0 to new Section 10.0 (Calibration and Standardization).

G. Section 7.0 Reagents, Media, and Standards

In this action, the EPA is renumbering and moving the current language in Section 3.0 (Reagents) to a new Section 7.0 titled ''Reagents, Media, and Standards,'' and making clarifying edits and technical revisions to the specifications. Table 4 of this preamble identifies the new numbering for the subsections currently in Section 3.0 and Table 5 of this preamble identifies new specifications (and the associated subsection) we are including in Section 7.0.

TABLE 4—CROSSWALK FOR REVISIONS TO CURRENT METHOD SECTIONS

Description	Current section	Revised section
Filter	3.1.1	7.1
Adsorbent resin	3.1.2	7.2
Glass wool	3.1.3	7.3
Water	3.1.4	7.4

TABLE 4—CROSSWALK FOR REVISIONS TO CURRENT METHOD SECTIONS—Continued

Description	Current section	Revised section
Silica gel	3.1.5	7.5
Methylene chloride	3.2.2	7.6
Sodium sulfate	3.3.2	7.8.2
Basic alumina	3.3.13	7.8.9.1.2
Silica gel	3.3.14	7.8.9.3
Carbon/Celite®	3.3.17	7.8.9.4
Nitrogen	3.3.18	7.8.10

TABLE 5—ADDITIONAL SPECIFICATIONS FOR SECTION 7.0

Description	Revised section
High-boiling alkanes used as keeper solvents	7.8.8
Liquid column packing materials	7.8.9
Acidic alumina	7.8.9.1.1
Florisil®	7.8.9.2
Helium	7.9.1
Spiking standards	7.9.2
Pre-sampling adsorbent standard	7.9.3
Pre-extraction filter recovery standard	7.9.4
Pre-extraction standard	7.9.5
Pre-analysis standard	7.9.6

We are replacing the filter precleaning procedures of the current method with specifications for conducting a filter quality control check. We are also deleting unnecessary specifications (presented in Table 6 of this preamble) to reflect modern methods. We are renaming the isotopic spiking standard mixtures to better relate the standards to their use in the final method. We are ensuring that the isotopically labeled spiking standards are named consistently throughout the final method.

TABLE 6—DELETIONS OF MATERIAL SPECIFICATIONS IN THE CURRENT METHOD 23

Material	Current section
Chromic acid cleaning solution	3.1.6
Benzene	3.3.7
Ethyl acetate	3.3.8
Cyclohexane	3.3.12
Hydrogen	3.3.19
Internal standard solution	3.3.20
Surrogate standard solution	3.3.21
Recovery standard solution	3.3.22

We are also moving the current Section 7.0 to a new Section 9.0 (Quality Control).

H. Section 8.0 Sample Collection, Preservation, and Storage

In this action, the EPA is renumbering and moving the current language in Section 4.0 (Procedure) to a new Section 8.0 titled ''Sample Collection, Preservation, and Storage,'' and making clarifying edits and technical revisions to the current procedures for sampling and field sample recovery. The new Section 8.0 also includes added requirements for sample storage conditions and holding times.

Under the sampling procedures of Method 23, we are finalizing revisions to the current requirements in Section 4.1.1 for pretest preparations. Table 7 of this preamble identifies the new numbering to revise and replace the requirements in Section 4.1.

TABLE 7—CROSSWALK FOR REVISIONS TO CURRENT METHOD SECTIONS

Description	Current section	Revised section
Glassware cleaning	4.1.1.1	8.1.1.1
Assembling the adsorbent module	4.1.1.2	8.1.1.2
Maintaining the sampling train components	4.1.1.3	8.1.1.3
Silica Gel	4.1.1.4	8.1.1.4
Checking and packing filters	4.1.1.5	8.1.1.5
Field preparation of the sampling train	4.1.3.1	8.1.3.1
Impinger assembly	4.1.3.2	8.1.3.2
Sampling probe and nozzle preparation	4.1.3.4	8.1.3.4

Table 8 of this preamble shows the specifications we are adding to the new Section 8.0. This action finalizes a minimum sample volume and sampling time requirements at each traverse point for continuous industrial processes that align Method 23 with other isokinetic stationary source methods, such as Method 5. The sampling time at each traverse point for batch industrial processes ensure measurements are made for the entire process cycle. The final filter check requirements add details that were absent from the original Method 23 and align the method with the requirements of other isokinetic stationary source methods, such as Methods 5, 26A, and 29, also in Appendix A of this Part. The final adsorbent module orientation requirements clarify the configuration of the adsorbent module to ensure that condensed moisture flows through the module into the water collection impinger. We are adding sampling filter temperature monitoring requirements to align Method 23 with other isokinetic stationary source methods. Also, we are adding adsorbent module temperature monitoring to confirm that the sorbent material was not exposed to elevated temperatures that could bias sample collection and results.

TABLE 8—ADDITIONAL SPECIFICATIONS FOR SECTION 8.1

Description	Revised section
Minimum sample volume	8.1.2.1
Sampling time for continuous processes	8.1.2.2
Sampling time for batch processes	8.1.2.3
Filter assembly	8.1.3.3
Orientation of the condenser and adsorbent module	8.1.3.4
Monitoring the filter temperature	8.1.5.1
Monitoring the adsorbent module temperature	8.1.5.2

Under sample recovery procedures, we are finalizing technical revisions as shown in Table 9 of this preamble. In this action, we are also adding specifications as shown in Table 10 of this preamble.

TABLE 9—CROSSWALK FOR REVISIONS TO CURRENT METHOD SECTIONS

Description	Current section	Revised section
Adsorbent module sample preparation	4.2.2	8.2.5
Preparation of Container No. 2	4.2.3	8.2.6
Rinsing of the filter holder and condenser	4.2.3	8.2.7
Weighing impinger water	4.2.5	8.2.8
Preparation of Container No. 3	4.2.4	8.2.9
Silica gel	4. 2.7	8.2.10

TABLE 10—ADDITIONAL SPECIFICATIONS FOR SECTION 8.2

Description	Revised section
Conducting a post-test leak check	8.2.1
Storage conditions for Container No. 1	8.2.4
Field sample handling, storage, and transport	8.2.11
Sample chain of custody	8.2.12

In the new Section 8.2.6, acetone and toluene rinses are collected in one bottle rather than separately. New Section 8.2.8 measures moisture by weight rather than by volume.

I. Section 9.0 Quality Control

In this action, the EPA is moving and renumbering the current Section 7.0 (Quality Control) to a new Section 9.0 titled "Quality Control," and making clarifying and technical revisions to the new Section 9.0. We are adding an introductory note that addresses maintaining, and documenting quality control compliance required in Method 23. We are adding a new subsection that clarifies the recordkeeping and reporting necessary to demonstrate compliance with quality control requirements of this method. We are also adding specifications for conducting pre-sampling, pre-extraction, and pre-analysis standard recoveries of isotopically-labeled standards and adding specifications for:

- Initial demonstration of capability (IDC).
- Quality Control Sample (QCS).
- Method detection limits (MDL).
- Laboratory method blank (LMB).
- Estimated detection limits (EDL).
- Field train proof blank.

It should be noted that the EDLs as proposed remain in the method and are sample specific. It should also be noted that the second source QCS also serves as an initial calibration verification. We are also moving language from the current Section 9.0 to new Section 12.0 (Data Analysis and Calculations).

J. Section 10.0 Calibration and Standardization

In this action, the EPA is renumbering and moving the text in Section 6.0 (Calibration) of the current method to a new Section 10.0 titled "Calibration and Standardization," and making clarifying and technical revisions to the specifications for calibrating the sampling and the HRGC/HRMS systems. We are adding specifications for tuning the HRMS system, moving the specification for HRMS resolution (currently in Section 5) to this new section, and adding text on the procedures for assessing the relative standard deviation for the mean instrument response factors to bring Method 23 up to date with current laboratory practice. We are also

updating the requirements for ion abundance ratio limits, and resolution checks under the continuing calibration verification to serve as performance indicators for analysis quality. We are adding a specification to prepare the continuing calibration verification (CCV) standard at the same time as the batch of field samples using the same labeled standards. We are also moving language in the current Section 10.0 to a new Section 16.0 (Bibliography).

K. Section 11.0 Analysis Procedure

In this action, the EPA is renumbering and moving the text in Section 5.0 (Analysis) of the current method to a new Section 11.0 titled ''Analysis Procedure,'' and making clarifying and technical revisions to the current specifications for sample extraction and sample cleanup and fractionation. We are also adding a new subsection describing how sample extract aliquots are prepared for cleanup and analysis.

We are also adding the specifications and recommendations for analysis procedures shown in Table 11 of this preamble.

TABLE 11—ADDITIONAL SPECIFICATIONS FOR SECTION 11.0

Description	Revised section
Preparing and operating the extraction apparatus	11.1.7 through 11.1.9.
Allow the extraction apparatus to cool	11.2.1.
Initial extract concentration	11.2.2.
Allow the sample extract to cool	11.2.3.
Recommended minimum volume for PCDD/PCDF analysis	11.2.3.
Further concentration of sample (if needed) for cleanup and analysis	11.2.4.
Sample cleanup and fractionation for PAH and PCDPE	11.3.1.
Sample cleanup and fractionation for PCDD/PCDF and PCB	11.3.2.
Addressing unresolved compounds	11.4.1.2.1.
Relative retention time for PCB	11.4.3.4.5.
Chlorodiphenyl ether interference	11.4.3.4.8.
MS lock-mass ions	11.4.3.4.9.
Identification criteria for PAH	11.4.3.4.10.
Calculations of target mass and mass per dry standard cubic meter	11.4.3.5.1 and 11.4.3.5.2.
Quantifying native PCDD/PCDF	11.4.3.5.3.
Reporting options	11.4.3.5.4 through 11.4.3.5.6.

L. Section 12.0 Data Analysis and Calculations

In this action, the EPA is renumbering and moving the current language in Section 9.0 (Calculations) to a new Section 12.0 titled ''Data Analysis and Calculations,'' and revising the equation variable list. We are revising the equations shown in Table 12 of this preamble.

TABLE 12—EQUATION REVISIONS FOR SECTION 12.0

Current equation	Description	Revised section
23–1	Individual relative response factor (RRF) for each compound	12.2
23–2	Amount of individual target compound i in the extract using the RRF of the CCV	12.7
23–4	Recovery of Labeled Compound Standards	12.9
23–7	Estimated detection limit	12.10
23–8	Total concentration	12.11

This section specifies that the CCV RRFs are used to quantify the target compounds rather than the initial calibration RRFs. We are also removing and replacing the current equations in Method 23 with the equations shown in Table 13 of this preamble to accommodate the final changes to the method procedures.

TABLE 13—ADDITIONAL EQUATIONS FOR SECTION 12.0

New equation	Description	Revised section
23–1	Individual compound RRF for each calibration level	12.2
23–2	Individual compound RRF for pre-extraction standard	12.2
23–4	Percent relative standard deviation of the RRFs for a compound over the calibration levels.	12.4
23–5	Standard deviation of the RRFs for a compound over the calibration levels	12.5
23–6	Percent difference of the RRF of the continuing calibration verification compared to the average RRF from the initial calibration for each target compound.	12.6
23–9	Concentration of the Individual Target Compound or Group i in the Emission Gas.	12.8
23–13	Half range for the prediction interval of results	12.12
23–14	Upper limit for the prediction interval of results	12.12
23–15	Lower limit for the prediction interval of results	12.12

M. Section 13.0 Method Performance

In this action, the EPA is adding a new Section 13.0 titled ''Method Performance,'' that includes the specifications shown in Table 14 of this preamble. The new Section 13 provides the basis for assessing accuracy with LMBs, increases labeled standards, and establishes performance criteria to monitor method performance.

TABLE 14—METHOD PERFORMANCE SPECIFICATIONS FOR SECTION 13.0

Description	Revised section
Background assessment of field train proof blank, LMB, and Materials (filters, adsorbent resin, glass wool, etc.).	13.1.
GC column systems used to measure PCDD/PCDF, PAH, and PCB target compounds	13.2 through 13.5.
Detection limits (Method detection limits and Estimated detection limits)	13.6.
Tuning HRGC/HRMS system	13.7.
MS lock-mass ions	13.8.
Initial calibration and continuing calibration verification	13.9 and 13.10.
QCS analysis	13.11.
Identification of target compounds	13.12 and 13.13.
Pre-sampling and pre-extraction standard recovery requirements	13.14 and 13.15.
Pre-analysis standard sensitivity requirements	13.16.
IDC-Lowest calibration concentration, Demonstration of precision, Demonstration of accuracy	13.17.
Modifications of the method	13.18 and 13.19.

N. Section 14.0 Pollution Prevention

In this action, the EPA is adding a new Section 14.0 titled ''Pollution Prevention,'' that specifies the procedures for minimizing or preventing pollution associated with preparing and using Method 23 standards.

O. Section 15.0 Waste Management

In this action, the EPA is adding a new Section 15.0 titled ''Waste Management,'' that specifies the laboratory responsibilities for managing the waste streams associated with collecting and analyzing Method 23 samples.

P. Section 16.0 Bibliography

In this action, the EPA is renumbering and moving the current language in Section 10.0 (Bibliography) to a new Section 16.0 titled ''Bibliography.'' We are deleting previous reference number 3 which is no longer relevant and adding new citations for the following references:

- Fishman, V.N., Martin, G.D. and Lamparski, L.L. Comparison of a variety of gas chromatographic columns with different polarities for the separation of chlorinated dibenzo-p-dioxins and dibenzofurans by high-resolution mass spectrometry. Journal of Chromatography A 1139 (2007) 285–300.
- International Agency for Research on Cancer. Environmental Carcinogens Methods of Analysis and Exposure Measurement, Volume 11—Polychlorinated Dioxins and Dibenzofurans. IARC Scientific Publications No. 108, 1991.
- Stieglitz, L., Zwick, G., Roth, W. Investigation of different treatment techniques for PCDD/PCDF in fly ash. Chemosphere 15: 1135–1140; 1986.
- U.S. Environmental Protection Agency. Method 8290A—Polychlorinated Dibenzo-p-dioxin (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), Revision 1. February 2007. In: Test Methods for Evaluating Solid Waste. Washington, DC. SW–846.
- U.S. Environmental Protection Agency. Office of Air Programs Publication No. APTD–0576: Maintenance, Calibration, and Operation of Isokinetic Source Sampling Equipment. Research Triangle Park, NC. March 1972.
- U.S. Environmental Protection Agency. Method 1625C—Semivolatile Organic Compounds by Isotope Dilution GCMS.
- U.S Environmental Protection Agency. Method 1613B—Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS.
- U.S. Environmental Protection Agency. Method 1668C—Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS.
- Tondeur, Y., Nestrick, T., Silva, Héctor A., Vining, B., Hart, J. Analytical procedures for the determination of polychlorinated-p-dioxins, polychlorinated dibenzofurans, and hexachlorobenzene in pentachlorophenol. Chemosphere Volume 80, Issue 2, June 2010, pages 157–164.
- U.S. Environmental Protection Agency. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2. EPA 821–R–16–006. December 2016.
- Tondeur Y, Niederhut WJ, Missler SR. A hybrid HRGC/MS/MS Method for the Characterization of Tetrachlorodibenzo-p-Dioxins in Environmental Samples; Bio. Med. and Environ. Mass Spectr. 14, pages 449–456, 1987.
- Gianluca R., Mosca S., Guerriero E., Rotatori M. Development of a new automated clean-up system for the simultaneous analysis of polychlorinated dibenzo-p-dioxins (PCDDs), dibenzofurans (PCDFs) and 'dioxin-like' polychlorinated biphenyls (dl-PCB) in flue gas emissions by GPC–SPE. J. Environ. Monit. 14, pages 1082–1090, 2012.
- U.S. Environmental Protection Agency. The National Dioxin Air Monitoring Network (NDAMN) Report of the Results of Atmospheric Measurements of Polychlorinated Dibenzo-p-Dioxins (PCDDs), Polychlorinated Dibenzofurans (PCDFs), and Dioxin-like Polychlorinated Biphenyl (PCBs) in Rural and Remote Areas of the United States from June 1998 through November 2004. EPA/600/R–13/183F. August 2013.
- Guo, Y., Kannan, K. Analytical Methods for the Measurement of Legacy and Emerging Persistent Organic Pollutants in Complex Sample Matrices. Comprehensive Analytical Chemistry. Vol. 67. January 2015.
- U.S. Environmental Protection Agency. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review. EPA–540–R–11–016. September 2011.

Q. Section 17.0 Tables, Diagrams, Flow Charts, and Validation Data

In this action, the EPA is adding a new Section 17 titled ''Tables, Diagrams, Flow Charts, and Validation Data,'' that contains all tables, diagrams, flow charts, and validation data referenced in Method 23. We are revising Figures 23–1 and 23–2 and renaming and/or renumbering the current Method 23 tables as shown in Table 15 of this preamble.

TABLE 15—REVISIONS TO METHOD 23 TABLES

Current method	Final method
Table 1—Composition of the Sample Fortification and Recovery Standards Solutions.	Table 23–7. Concentration of the Sample Fortification for PCDD and PCDF.
Table 2—Composition of the Initial Calibration Solutions	Table 23–11. Concentration of the Initial Calibration Standard Solutions for PCDD and PCDF.
Table 3—Elemental Compositions and Exact Masses of the Ions Monitored by High Resolution Mass Spectrometry for PCDD's and PCDF's.	Table 23–4. Elemental Compositions and Exact Masses of the Ions Monitored by High-Resolution Mass Spectrometry for PCDD and PCDF.
Table 4—Acceptable Ranges for Ion-Abundance Ratios of PCDD's and PCDF's.	Table 23–15. Recommended Ion Type and Acceptable Ion Abundance Ratios.
Table 5—Minimum Requirements for Initial and Daily Calibration Response Factors.	Table 23–14. Minimum Requirements for Initial and Continuing Calibration Response Factors for Isotopically Labeled and Native Compounds.

We are also adding Figure 23–3 (Soxhlet/Dean-Stark Extractor) and Figure 23–4 (Sample Preparation Flow Chart) and adding the tables listed in Table 16 of this preamble.

TABLE 16—ADDITIONAL TABLES TO METHOD 23

Revised table	Description
23–1	Polychlorinated Dibenzo-*p*-dioxin and Polychlorinated Dibenzofuran Target Analytes.
23–2	Polycyclic Aromatic Hydrocarbon Target Analytes.
23–3	Polychlorinated Biphenyl Target Analytes.
23–5	Elemental Compositions and Exact Masses of the Ions Monitored by High-Resolution Mass Spectrometry for PAH.
23–6	Elemental Compositions and Exact Masses of the Ions Monitored by High-Resolution Mass Spectrometry for PCB.
23–8	Concentration of the Sample Fortification for PAH.
23–9	Concentration of the Sample Fortification for PCB.
23–10	Sample Storage Conditions and Laboratory Hold Times.
23–12	Concentration of the Initial Calibration Standard Solutions for PAH.
23–13	Concentration of the Initial Calibration Standard Solutions for PCB.
23–16	Typical DB5–MS Column Conditions.
23–17	Assignment of Pre-extraction Standards for Quantitation of Target PCB.
23–18	Initial Demonstration of Capability Quality Control (QC) Requirements.

V. Summary of Final Revisions Related to 40 CFR Parts 60, 63, and 266

A. 40 CFR Part 60—Standards of Performance for New Stationary Sources

In 40 CFR 60.17(h), we are incorporating by reference ASTM D4840–99(2018)e1, Standard Guide for Sample Chain-of-Custody Procedures, and amending the reference to ASTM D6911–15, Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis, to include for use in Method 23.

In 40 CFR part 60, subpart CCCC, we are revising 40 CFR 60.2125(g)(2) and (j)(2) to realign the requirement for quantifying isomers to the reorganized Section 11.4.2.4 in the revisions of Method 23.

In 40 CFR part 60, subpart DDDD, we are revising 40 CFR 60.2690(g)(2) and (j)(2) to realign the requirement for identifying isomers to the reorganized Section 11.4.2.4 in the revisions of Method 23.

B. 40 CFR Part 63—National Emission Standards for Hazardous Air Pollutants for Source Categories

In 40 CFR 63.849(a)(13) and (a)(14), we are replacing CARB Method 428 with EPA Method 23 for the measurement of PCB emissions from roof monitors not employing wet roof scrubbers.

In 40 CFR 63.1208(b)(1), we are removing the requirement for administrator's approval to use Method 23 for measuring PCDD/PCDF emissions from hazardous waste combustors.

In 40 CFR 63.1625(b)(10), we are replacing CARB Method 429 with EPA Method 23 for measuring the emissions of PAH from ferromanganese electric arc furnaces.

In Table 3 to Subpart AAAAAAA, we are replacing the requirement for analysis of PAH by SW–846 Method 8270 with a requirement to use EPA Method 23. Specifically, we are deleting "with analysis by SW–846 Method 8270D" in row 6 of Table 3 to Subpart AAAAAAA. Because revisions to Method 23 eliminate the use of methylene chloride in field sampling activities, we are also removing footnote "b" in Table 3 to Subpart AAAAAAA.

C. 40 CFR Part 266—Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities

In 40 CFR 266.104, we are adding EPA Method 23 as an alternative to SW–846 Method 0023A. We proposed to make this change to 40 CFR 266.104. In addition to this specific change, we are making a conforming change in 40 CFR part 266 Appendix IX. EPA considers this conforming change a logical outgrowth of the proposed revisions to Method 23.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA. The revisions being promulgated in this action to Method 23 do not add information collection requirements, but make corrections, clarifications, and updates to existing testing methodology.

C. Regulatory Flexibility Act (RFA)

I certify that this action does not have a significant economic impact on a substantial number of small entities under the RFA. This action does not impose any requirements on small entities. The final revisions to Method 23 do not impose any requirements on regulated entities. Rather, the final changes improve the quality of the results when required by other rules to use Method 23. Revisions to Method 23 allow contemporary advances in analysis techniques to be used. Further, the final changes in Method 23 analysis procedures reduce the impact of this method by bringing it into alignment with other agency methods.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538. The action imposes no enforceable duty on any State, local or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on the Indian Tribal Governments, on the relationship between the national government and the Indian Tribal Governments, or on the distribution of power and responsibilities among Indian Tribal Governments and the various levels of government. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in Section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not establish or revise a standard that provides protection to children against environmental health and safety risks.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

This action involves technical standards. The EPA will use ASTM D6911–15 (Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis) and ASTM D4840–99(2018)e1 (Standard Guide for Sample Chain-of-Custody Procedures). These ASTM standards cover best practices that guide sample shipping and tracking from collection through analysis.

These standards were developed and adopted by ASTM International. The standard may be obtained from *https://www.astm.org* or from the ASTM at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations (people of color) and low-income populations.

The EPA believes that this type of action does not concern human health or environmental conditions and, therefore, cannot be evaluated with respect to potentially disproportionate and adverse effects on people of color, low-income populations and/or Indigenous peoples. This action updates Method 23, which will improve the quality of the results when required by other rules to use Method 23.

K. Congressional Review Act (CRA)

This action is subject to the CRA and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

L. Determination Under Clean Air Act Section 307(d)

This final rule is not subject to the provisions of CAA section 307(d). This final rule does not promulgate any of the actions listed in CAA section 307(d)(1).

List of Subjects

40 CFR Part 60

Environmental protection, Air pollution control, Hazardous air pollutants, Incorporation by reference, Method 23, Polychlorinated biphenyls, Polychlorinated dibenzofurans, Polychlorinated dibenzo-p-dioxins, Polycyclic aromatic compounds, Test methods.

40 CFR Part 63

Environmental protection, Air pollution control, Method 23, New source performance, Polychlorinated biphenyls, Polychlorinated dibenzofurans, Polychlorinated dibenzo-p-dioxins, Polycyclic aromatic hydrocarbons, Test methods.

40 CFR Part 266

Environmental protection, Air pollution control, Hazardous air pollutants, Hazardous waste, Method 23, Polychlorinated biphenyls, Polychlorinated dibenzofurans, Polychlorinated dibenzo-p-dioxins, Polycyclic aromatic hydrocarbons, Test methods, Waste management.

Michael S. Regan,

Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency amends Title 40, Chapter I of the Code of Federal Regulations as follows:

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

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

Subpart A—General Provisions

■ 2. In § 60.17:

■ a. Redesignate paragraphs (h)(168) through (h)(213) as (h)(169) through (h)(214);

■ b. Add new paragraph (h)(168); and

■ c. Revise newly redesignated paragraph (h)(194).

The addition and revision read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(h) * * *

(168) ASTM D4840–99(2018)e1 Standard Guide for Sample Chain-of-Custody Procedures, approved August 2018; IBR approved for Appendix A–7: Method 23.

* * * * *

(194) ASTM D6911–15 Standard Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis, approved January 15, 2015; IBR approved for Appendix A–7: Method 23; Appendix A–8: Method 30B.

* * * * *

Subpart CCCC—Standards of Performance for Commercial and Industrial Solid Waste Incineration Units

■ 3. In § 60.2125, revise paragraphs (g)(2) and (j)(2) to read as follows:

§ 60.2125 How do I conduct the initial and annual performance test?

* * * * *

(g) * * *

(2) Quantify isomers meeting identification criteria in Section 11.4.3.4 of Method 23, regardless of whether the isomers meet identification criteria in Section 11.4.3.4.1 of Method 23. You must quantify the isomers per Section 11.4.3.5 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers to meet the identification criteria in Section 11.4.3.4 of Method 23.)

* * * * *

(j) * * *

(2) Quantify isomers meeting identification criteria in Section 11.4.3.4 of Method 23, regardless of whether the isomers meet identification Section 11.4.3.4.1 of Method 23. You must quantify the isomers per Section 11.4.3.5 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers to meet the identification criteria in Section 11.4.3.4 of Method 23.)

* * * * *

Subpart DDDD—Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units

■ 4. In § 60.2690, revise paragraphs (g)(2) and (j)(2) to read as follows:

§ 60.2690 How do I conduct the initial and annual performance test?

* * * * *

(g) * * *

(2) Quantify isomers meeting identification criteria in Section 11.4.3.4 of Method 23, regardless of whether the isomers meet identification Section 11.4.3.4.1 of Method 23. You must quantify the isomers per Section 11.4.3.5 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers to meet the identification criteria in Section 11.4.3.4 of Method 23.)

* * * * *

(j) * * *

(2) Quantify isomers meeting identification criteria in Section 11.4.3.4 of Method 23, regardless of whether the isomers meet identification Section 11.4.3.4.1 of Method 23. You must quantify the isomers per Section 11.4.3.5 of Method 23. (Note: You may reanalyze the sample aliquot or split to reduce the number of isomers to meet the identification criteria in Section 11.4.3.4 of Method 23.); and

* * * * *

■ 5. Revise Method 23 of Appendix A–7 to Part 60 to read as follows:

Appendix A–7 to Part 60—Test Methods 19 Through 25E

* * * * *

Method 23—Determination of Polychlorinated Dibenzo-*p*-Dioxins, Polychlorinated Dibenzofurans, Polychlorinated Biphenyls, and Polycyclic Aromatic Hydrocarbons From Stationary Sources

1.0 Scope and Application

1.1 Applicability. This method applies to the measurement of polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/PCDF), polychlorinated biphenyls (PCB), and/or polycyclic aromatic hydrocarbons (PAH) in emissions from stationary sources. Using this method, you can measure these analyte groups individually or in any combination using a single sample acquisition unless otherwise specified in a rule, regulation, or permit. Tables 23–1 through 23–3 of this method list the applicable target analytes for Method 23. If all 209 PCB are analyzed, the 17 toxic PCB congeners should be resolved and reported while the other PCB can be reported as totals by homolog, for example, total trichlorobiphenyl (TrCB).

1.2 Scope. This method describes the sampling and analytical procedures used to measure selected PCDD and PCDF in stationary sources when required in an applicable subpart. This method also describes how the same sampling and analysis technology can be used to measure selected PCB and PAH from stationary source in combination or as each individual compound class when required in an applicable subpart. However, Method 23 incorporates by reference some of the specifications (*e.g.,* equipment and supplies) and procedures (*e.g.,* sampling and analytical) from other methods in this part that are essential to conducting Method 23. To obtain reliable samples, source sampling teams should be trained and experienced with the following additional EPA test methods: Method 1, Method 2, Method 3, Method 4, and Method 5 of Appendices A–1, A–2, and A–3 to 40 CFR part 60. Laboratory analysis teams should be trained and experienced with Method 1668C (found at: *https://www.epa.gov/sites/production/files/2015-09/documents/method_1668c_2010.pdf)* and Method 1613B of 40 CFR part 136 Appendix A and have a working knowledge of isotope dilution and the use of high-resolution gas chromatography/high-resolution mass spectrometry (HRGC/HRMS).

1.3 The HRGC/HRMS portions of this method are for use by laboratory analysts experienced with HRGC/HRMS analysis of PCDD, PCDF, PCB, and PAH or under the close supervision of such qualified persons. Each source testing team, including the sampling and laboratory organization(s) that use this method, must demonstrate the ability to generate acceptable results that meet the performance criteria in Section 13 of this method.

1.4 This method is "performance-based" and includes acceptability criteria for assessing sampling and analytical procedures. Users may modify the method to overcome interferences or to substitute superior materials and equipment, provided that they meet all performance criteria in this method. Section 13 of this method presents requirements for method performance.

2.0 Summary of Method

This method identifies and determines the concentration of specific PCDD, PCDF, PCB, and PAH compounds. Gaseous and particulate bound target pollutants are withdrawn from the gas stream isokinetically and collected in the sample probe, on a glass fiber or quartz filter, and on a packed column of adsorbent material. This method is not intended to differentiate between target compounds in particulate or vapor fractions. The target compounds are extracted from the combined sample collection media. Portions of the extract are chromatographically fractionated to remove interferences, separated into individual compounds or simple mixtures by HRGC, and measured with HRMS. This method uses isotopically labeled standards to improve method accuracy and precision through isotope dilution quantitation.

3.0 Definitions

3.1 Alternate Recovery Standards. A group of isotopically labeled compounds that is not otherwise designated in this method

for quality control (QC) purposes. Alternate recovery standards can be used to assess the recovery of a compound class relative to any step in the sampling and analysis procedure that is not already assessed as a mandatory part of this method, such as the cleanup step.

3.2 Benzo[a]pyrene Toxic Equivalency Quotient (B[a]P–TEQ). One of several schemes that express the toxicity for PAH compounds in terms of the most toxic form of PAH, benzo[*a*]pyrene, as specified in applicable regulations, permits, or other requirements.

3.3 Continuing Calibration Verification (CCV) Standard. A standard prepared at the mid-point concentration of the calibration used to verify the initial calibration. Prepare the CCV standard at the same time as the batch of field samples using the same labeled standards.

3.4 Congener. An individual compound with a common structure (dioxin, furan, or biphenyl), only differing by the number of chlorine or other substituent attached to the structure.

3.5 Estimated Detection Limit (EDL). The minimum qualitatively recognizable signal above background for a target compound. The EDL is a detection limit specific to each sample analysis based on the noise signal measured near the retention time of a target compound or target isomer group. Being sample specific, the EDL is affected by sample size, dilution, recoveries of pre-extraction standard, chemical noise from sample extract, electronic noise from instrument, extract aliquot, relative response of instrument, etc.

3.6 Estimated Maximum Possible Concentration (EMPC). An EMPC is a worst-case estimate of the target compound concentration. Report the results as EMPC when the ion abundance ratio for a target analyte is outside the performance criteria. Calculate the EMPC using both quantitation ions.

3.7 Field Train Proof Blank. A field train proof blank train is a QC sample to evaluate equipment preparation and potential contamination during sample recovery and consists of a fully assembled train at the sampling site, without actual sampling. The field train proof blank train uses glassware from the same preparation batch as the field samples.

3.8 Homolog. A compound belonging to a series of compounds with the same general molecular formula, differing from each other by the number of repeating units of chlorine.

3.9 Isomer. An individual compound with a common structure (dioxin, furan, or biphenyl), only differing by the position of chlorine atoms attached to the structure.

3.10 Isotope Dilution. A means of determining a naturally occurring (native) compound by reference to the same compound in which one or more atoms has been isotopically enriched.

3.11 Laboratory Method Blank (LMB). A quality control sample to assess background contamination or interference from media, reagents, equipment, etc. An LMB is prepared in the laboratory, composed of clean sampling media (filter and XAD–2), using same labeled standards, media, reagents, and materials (sodium sulfate, glass wool, etc.) and processed (extraction, fractionations, cleanup) and analyzed using the same procedures as a field sample.

3.12 Polychlorinated Biphenyl (PCB) congeners. Any or all 209 chlorinated biphenyl congeners. Table 23–3 of this method lists the primary target compounds and Appendix A to this method provides the full list of 209 PCB congeners and isomers.

3.12.1 Monochlorobiphenyl (MoCB). Any or all three monochlorinated biphenyl isomers.

3.12.2 Dichlorobiphenyl (DiCB). Any or all 12 dichlorinated biphenyl isomers.

3.12.3 Trichlorobiphenyl (TrCB). Any or all 24 trichlorinated biphenyl isomers.

3.12.4 Tetrachlorobiphenyl (TeCB). Any or all 42 tetrachlorinated biphenyl isomers.

3.12.5 Pentachlorobiphenyl (PeCB). Any or all 46 pentachlorinated biphenyl isomers.

3.12.6 Hexachlorobiphenyl (HxCB). Any or all 42 hexachlorinated biphenyl isomers.

3.12.7 Heptachlorobiphenyl (HpCB). Any or all 24 heptachlorinated biphenyl isomers.

3.12.8 Octachlorobiphenyl (OcCB). Any or all 12 octachlorinated biphenyl isomers.

3.12.9 Nonachlorobiphenyl (NoCB). Any or all three nonachlorinated biphenyl isomers.

3.12.10 Decachlorobiphenyl (DeCB). Biphenyl fully chlorinated with 10 chlorine atom substituents replacing hydrogen in the parent compound.

3.13 Polychlorinated dibenzo-p-dioxin (PCDD) congeners. Any or all 75 chlorinated dibenzo-*p*-dioxin congeners. There are seven 2,3,7,8 substituted PCDD congeners and four PCDD homolog groups listed in Table 23–1 of this method. This method does not measure mono- through tri-PCDD and includes non-2,3,7,8 substituted congeners in the total homolog categories.

3.13.1 Tetrachlorodibenzo-*p*-dioxin (TeCDD*).* Any or all 22 tetrachlorinated dibenzo-*p*-dioxin isomers.

3.13.2 Pentachlorodibenzo-*p*-dioxin (PeCDD). Any or all 14 pentachlorinated dibenzo-*p*-dioxin isomers.

3.13.3 Hexachlorodibenzo-*p*-dioxin (HxCDD). Any or all 10 hexachlorinated dibenzo-*p*-dioxin isomers.

3.13.4 Heptachlorodibenzo-*p*-dioxin (HpCDD). Any or all two heptachlorinated dibenzo-*p*-dioxin isomers.

3.13.5 Octachlorodibenzo-*p*-dioxin (OCDD). Dibenzodioxin fully chlorinated with eight chlorine atom substituents replacing hydrogen in the parent compound.

3.14 Polychlorinated dibenzofuran (PCDF) congeners. Any or all chlorinated dibenzofuran congeners. There are ten 2,3,7,8 substituted PCDF congeners and four PCDF homolog groups listed in Table 23–1 of this method. This method does not measure mono- through tri-PCDF and includes non-2,3,7,8 substituted congeners in the total homolog categories.

3.14.1 Tetrachlorodibenzofuran (TeCDF). Any or all 38 tetrachlorinated dibenzofuran isomers.

3.14.2 Pentachlorodibenzofuran (PeCDF). Any or all 28 pentachlorinated dibenzofuran isomers.

3.14.3 Hexachlorodibenzofuran (HxCDF). Any or all 16 hexachlorinated dibenzofuran isomers.

3.14.4 Heptachlordibenzofuran (HpCDF). Any or all four heptachlorinated dibenzofuran isomers.

3.14.5 Octachlorodibenzofuran (OCDF). Dibenzofuran fully chlorinated with eight chlorine atom substituents replacing hydrogen in the parent compound.

3.15 Polychlorinated diphenyl ethers (PCDPE). Any or all chlorinated substituted diphenyl ethers.

3.15.1 Hexachlorodiphenyl ether (HxCDPE). Any or all 42 hexachlorinated diphenyl ether isomers.

3.15.2 Heptachlorodiphenyl ether (HpCDPE). Any or all 24 heptachlorinated diphenyl ether isomers.

3.15.3 Octachlorodiphenyl ether (OCDPE). Any or all 12 octachlorinated diphenyl ether isomers.

3.15.4 Nonachlorodiphenyl ether (NCDPE). Any or all three nonachlorinated diphenyl ether isomers.

3.15.5 Decachlorodiphenyl ether (DCDPE).

3.16 Polycyclic Aromatic Hydrocarbons (PAH). Any or all aromatic compounds with two or more fused six-member rings. Table 23–2 of this method lists the target PAH compounds for this method. You may add and analyze additional PAH compounds by adding the appropriate ^{13}C isotopically labeled compound to the pre-extraction standard mixture and by following the other requirements for target PAH compounds in this method.

3.17 Pre-analysis Standard. A group of isotopically labeled compounds added at a known amount immediately prior to analysis and used to monitor instrument response, injection errors, instrument drift and to determine the recovery of the pre-extraction standard compounds. Add pre-analysis standard to every sample (including blank, QC samples, and calibration solutions) at a known amount.

3.18 Pre-extraction Filter Recovery Standard. A group of isotopically labeled compounds added at a known amount to the filter used to indicate the extraction efficiency of the filter media. Add pre-extraction filter recovery standard to the filter samples just prior extraction. The pre-extraction filter recovery standard is not used for quantitating or recovery correction.

3.19 Pre-extraction Standard. A group of isotopically labeled compounds added in a known amount to the XAD–2 adsorbent resin of each sample immediately before extraction and used for quantitation of target and other labeled compounds to correct for extraction, cleanup, and concentration recovery. These isotopically labeled compounds constitute a matrix spike of the resin. Add pre-extraction standard to every sample at the same level (including blank, QC samples, and calibration solutions).

3.20 Pre-sampling Adsorbent Standard. A group of isotopically labeled compounds added in a known amount to the XAD–2 adsorbent prior to sampling used to monitor sampling aspects of the method.

3.21 Pre-transport Standard. Spiking compound from the list of alternative recovery standards that can be added by the laboratory to the sample shipping containers used to transport field equipment rinse and

recovery samples prior to sampling. The measured concentration of the pre-transport recovery standard provides a quality check on potential probe rinse sample spillage or mishandling after sample collection and during shipping.

3.22 Quality Control Sample (QCS). A mid-level standard prepared from a second source standard or prepared from a source of standards different from the source of calibration standards. The purpose of the QCS is to verify the integrity of the primary calibration standards. A QCS is analyzed during the initial demonstration of capability (IDC) and following each initial calibration (at a minimum quarterly) thereafter.

3.23 Relative Response Factor (RRF). The response of the mass spectrometer (MS) to a known amount of an analyte relative to a known amount of an isotopically labeled standard.

3.24 2,3,7,8-Tetrachlorodibenzo-p-dioxin Toxic Equivalency Quotient (2,3,7,8-TeCDD TEQ). A procedure that expresses the toxicity of PCDD, PCDF, and PCB in terms of the most toxic dioxin, as specified in applicable regulations, permits, or other requirements.

4.0 Interferences

Despite interferences, confidence of the data is based on the enhanced selectivity of fractionation, gas chromatograph (GC) separation and detector resolving power, the QC check ions, and monitoring PCDPE.

4.1 PCB and PCDPE have similar molecular weight and chromatographic properties to PCDD and PCDF. PCB may produce fragment ions at interfering mass-to-charge ratios (m/z) when losing chlorine (Cl_2) or 2 Cl_2 during ionization processes. With HRMS, GC separation, and fractionation, PCB should not pose a problem for PCDD/PCDF identification and quantitation. PCDPE, when losing Cl_2, also produce interfering m/z values in the PCDF homolog group with two fewer chlorine atoms (*i.e.,* an octachlorinated PCDPE can interfere with a hexachlorinated PCDF). The latter interferences are potentially detected by monitoring an m/z corresponding to the potentially interfering PCDPE; however, the fragmentation patterns of all PCDPE may not be known, complicating any attempt to quantify the extent of ether interference.

Note: Consider monitoring 328 m/z if high levels of PCB are expected.

4.2 Very high amounts of other organic compounds in the matrix may interfere with the analysis. This method provides examples of column-chromatographic cleanup as procedures to reduce, but not necessarily eliminate, matrix effects due to high concentrations of organic compounds (International Agency for Research on Cancer 1991).

4.3 Target compound contaminants or related organics in solvents, reagents, glassware, isotopically labeled spiking standards, and other sample processing hardware are potential method interferences. Routinely evaluate all these materials to demonstrate that they are either free from interferences under the conditions of the analysis, or that the interference does not compromise the quality of the analysis results. Evaluate chemical interference through the preparation and analysis of an LMB. Use high purity reagents, solvents, and standards to minimize interferences in sample analysis.

4.4 PAH are subject to degradation when exposed to ultraviolet light. Take precautions to shield samples from sunlight or fluorescent light sources during sample collection, recovery, extraction, cleanup, and concentration.

5.0 Safety

Note: Develop a strict laboratory safety program for the handling of PCDD, PCDF, PCB, and/or PAH.

5.1 Compounds in the PCDD and PCDF classes such as 2,3,7,8-TeCDD are aneugenic, carcinogenic, and teratogenic in laboratory animal studies. Other PCDD and PCDF containing chlorine atoms in positions 2,3,7,8 have toxicities comparable to that of 2,3,7,8-TeCDD.

5.2 PCB and benzo[a]pyrene are classified as known or suspected human or mammalian carcinogens. Be aware of the potential for inhalation and ingestion exposure to laboratory analysts.

5.3 This method recommends that the laboratory purchase dilute standard solutions of the analytes required for this method. However, if preparing primary solutions, use a hood or glove box. Laboratory personnel handling primary solutions should wear personal protective equipment including a toxic gas respirator mask fitted with charcoal filters approved by the National Institute for Occupational Safety and Health (NIOSH)/Mine Safety Health Administration (MSHA) to prevent the inhalation of airborne particulates if not working in an approved hood or glove box.

5.4 The toxicity or carcinogenicity of other reagents or chemicals used in this method is not precisely defined. However, treat each chemical as a potential health hazard and minimize exposure to these chemicals. The laboratory is responsible for maintaining a current awareness file of Occupational Safety and Health Administration (OSHA) regulations regarding the safe handling of the chemicals specified in this method. Ensure that a reference file or list of internet sites that contain safety data sheets (SDS) is available to all personnel involved in the sampling and chemical analysis of samples known or suspected to contain PCDD, PCDF, PCB, and PAH.

6.0 Equipment and Supplies

Note: Brand names, suppliers, and part numbers are for illustration purposes only and no endorsement is implied. Apparatus and materials other than those specified in this method may achieve equivalent performance. Meeting the performance requirements of this method is the responsibility of the source testing team and laboratory team.

6.1 Sampling Apparatus. Figure 23–1 of this method shows a schematic of the Method 23 sampling train. Do not use sealing greases or brominated flame retardant-coated tape in assembling the train. Do not use silicon tubing in direct contact with flue gases. The train is identical to that described in Section 6.1.1 of Method 5 of Appendix A–3 to 40 CFR part 60 with the following additions:

6.1.1 Nozzle. The nozzle must be made of quartz, borosilicate glass, or titanium. Stainless steel nozzles should not be used.

6.1.2 Probe Liner. Use either polytetrafluoroethylene (PTFE), borosilicate, or quartz glass probe liners with a heating system capable of maintaining a probe gas temperature of 120 ± 14 °C (248 ± 25 °F) during sampling, or such other temperature as specified by an applicable subpart of the standards or as approved by the Administrator. Use a PTFE ferrule or single-use PTFE coated O-ring to achieve the seal at the nozzle end of the probe for stack temperatures up to about 300 °C (572 °F). Use a quartz glass liner and integrated quartz nozzle for stack temperatures between 300 and 1,200 °C (572 and 2,192 °F).

6.1.3 Filter Holder. Use a filter holder of borosilicate glass with a PTFE frit or PTFE-coated wire filter support. The holder design should provide a positive seal against leakage from the outside or around the filter. The holder should be durable, easy to load, leak-free in normal applications, and positioned immediately following the probe and cyclone bypass (or cyclone, if used) with the active side of the filter perpendicular to the source of the flow.

6.1.4 Filter Heating System. Use any heating system capable of monitoring and maintaining the temperature around the filter to ensure that the sample gas temperature exiting the filter is 120 ± 14 °C (248 ± 25 °F) during sampling or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application.

6.1.5 Filter Temperature Sensor. Install a temperature sensor capable of measuring temperature to within ±3 °C (5.4 °F) so that the sensing tip protrudes at least 1.3 centimeters (cm) (1–2 in.) into the sample gas exiting the filter. Encase the sensing tip of the sensor in glass or PTFE, if needed.

6.1.6 Sample Transfer Line. The sample transfer line transports gaseous emissions from the heated filter holder to the condenser and must be heat traced and constructed of glass or PTFE with connecting fittings that form leak-free, vacuum-tight connections without using sealing greases or tapes. Keep the sample transfer lines as short as possible and maintain the lines at a temperature of 120 °C ± 14 °C (248 °F ± 25 °F) using active heating when necessary. Orient the sample transfer lines with the downstream end lower than the upstream end so that any condensate will flow away from the filter and into the condenser.

6.1.7 Condenser. Glass, water-jacketed, coil-type with compatible fittings. Orient the condenser to cause moisture to flow down to the adsorbent module to facilitate condensate drainage. Figure 23–2 of this method shows a schematic diagram of the condenser.

6.1.8 Water Circulating Bath. Use a bath pump circulating system capable of providing chilled water flow to the condenser and adsorbent module water jackets. Typically, a submersible pump is placed in the impinger ice water bath to circulate the ice water contained in the bath. Verify the function of this system by

measuring the gas temperature at the entrance to the adsorbent module. Maintain this temperature at <20 °C (68 °F).

6.1.9 Adsorbent Module. Use a water-jacketed glass container to hold up to 40 grams (g) of the solid adsorbent. Figure 23–2 of this method shows a schematic diagram of the adsorbent module. Other physical configurations of the adsorbent resin module/condenser assembly are acceptable if the configuration contains the requisite amount of solid adsorbent and maintains the minimum length-to-width adsorbent bed ratio of two-to-one. Orient the adsorbent module vertically to facilitate condensate drainage. The connecting fittings must form leak-free, vacuum-tight seals. Include a coarse glass frit in the adsorbent module to retain the adsorbent.

6.1.10 Impingers. Use five impingers connected in series with leak-free ground glass fittings or any similar leak-free noncontaminating fittings. The first impinger must be a short-stem (water-dropout) design or equivalent. The second, fourth, and fifth impingers must be of the Greenburg-Smith design, modified by replacing the tip with a 1.3 cm (½ in.) inside diameter (ID) glass tube extending to approximately 1.3 cm (½ in.) from the bottom of the flask. The third impinger must be of the Greenburg-Smith design with the standard tip. The second and third impingers must contain known quantities of water, and the fifth impinger must contain a known weight of silica gel or equivalent desiccant. Alternatively, you may omit the first impinger if you do not expect excess moisture in the sample gas.

6.2 Sample Recovery Equipment.

6.2.1 Fitting Caps. Use leak-free ground glass fittings or any similar leak-free non-contaminating fitting to cap the sections of the sampling train exposed to the sample gas. Alternatively, use PTFE tape or contaminant-free aluminum foil for this purpose (see Section 6.2.6 of this method).

6.2.2 Wash Bottles. Use PTFE bottles.

6.2.3 Probe-Liner, Probe-Nozzle, and Filter-Holder Brushes. Use inert bristle brushes with precleaned stainless steel or PTFE handles. Extensions of the probe brush must be made of stainless steel or PTFE and be at least as long as the probe. Use brushes that are properly sized and shaped to remove accumulated material from the nozzle and probe liner if used.

6.2.4 Filter Storage Container. Use a sealed filter holder, wide-mouth amber glass jar with PTFE-lined cap, or glass petri dish sealed with PTFE tape. Purchase precleaned amber glass jars and petri dishes, or clean according to the glassware cleaning procedures listed in Section 8.1.1.1 of this method.

6.2.5 Field Balance. Use a weighing device capable of measurements to an accuracy of 0.5 g.

6.2.6 Aluminum Foil. Use heavy duty aluminum foil cleaned by rinsing three times with hexane or toluene and stored in a pre-cleaned glass petri dish or glass jar. Do not use aluminum foil to wrap or contact filter samples due to the possibility of reaction between the sample and the aluminum.

6.2.7 Silica Adsorbent Storage Container. Use an air-tight container to store silica gel.

6.2.8 Glass Sample Storage Container. Recover samples in amber glass bottles, 500- or 1000-milliliters (mL) with leak-free PTFE-lined caps. Either purchase precleaned bottles or clean containers according to glassware cleaning procedures listed in Section 8.1.1.1 of this method.

6.3 Sample Extraction Equipment.

6.3.1 Sample Container. Use 125- and 250-mL amber glass bottles with PTFE-lined caps.

6.3.2 Test Tubes. Use glass test tubes or small (*e.g.,* 5 to 10 mL) amber vials.

6.3.3 Soxhlet/Dean-Stark Extraction Apparatus.

6.3.3.1 Soxhlet Apparatus. Use 200-mL capacity thimble holder capable of holding 43 × 123-millimeter (mm) extraction thimbles, with receiving flask (typically round-bottom).

6.3.3.2 Moisture Trap. Use Dean-Stark or Barret with fluoropolymer stopcock trap to fit between the Soxhlet extractor body and the condenser as shown in Figure 23–3 of this method.

Note: Dean-Stark or Barret traps are used to remove water with extraction solvents that are less dense and insoluble in water.

6.3.3.3 Extraction Thimble. Use quartz, glass, or glass fiber thimble, typically 43 × 123 mm to fit Soxhlet apparatus. The use of cellulose thimbles for sample extraction in this method is prohibited.

6.3.3.4 Heating Mantle. Use a hemispherical shaped heating mantle to fit round-bottom flask.

6.3.4 Kuderna-Danish (KD) Concentrator. Use an apparatus consisting of a three-ball Snyder column, a flask with leak-free joint to accept the three-ball Snyder column at the top, a leak-free joint to receive a graduated concentration tube at the bottom and a heating mantle.

Note: Rotary evaporation has only been demonstrated when analyzing PCDD/PCDF. The KD with Snyder column is recommended when analyzing for PAH and/or PCB to avoid evaporation loss resulting in failed performance criteria for pre-extraction spike recovery.

6.3.5 Nitrogen Evaporative Concentrator. Use a nitrogen evaporative concentrator equipped with a water bath with the temperature controlled in the range of 30 to 60 °C (86 to 140 °F) (N-Evap Organomation Associates, Inc., South Berlin, MA, or equivalent).

6.3.6 Separatory Funnels. Use glass or PTFE 2-liter separatory funnels.

6.4 Glass Liquid Chromatography Columns.

6.4.1 Pasteur Pipettes. Use disposable pipettes, or glass serological pipettes typically 150 mm long × 6 mm ID.

6.4.2 Liquid Chromatography Columns. 200 to 300 mm long × 20 mm ID with 250-mL reservoir.

6.5 Analytical Equipment.

6.5.1 Gas Chromatograph. Use a gas chromatograph consisting of the following components:

6.5.1.1 GC Oven. Use an oven capable of maintaining the separation column at the proper operating temperature ± 1.0 °C (1.8 °F) and performing programmed increases in temperature at rates of at least 40 °C/min with isothermal hold.

6.5.1.2 GC Temperature Monitor. Use a temperature monitor to measure column oven temperature to ± 1.0 °C (1.8 °F).

6.5.1.3 GC Flow System. Use an electronic pressure control or equivalent gas metering system to control carrier gas flow or pressure.

6.5.1.4 GC Injection Port. Use a split/splitless injection port in the splitless mode or on-column injection port for the capillary column.

6.5.2 Capillary GC Column. Use different columns for the analysis of the different target compound classes in this method, if needed. Perform the resolution checks in Sections 10.2.3.5 and 10.2.3.6 of this method to document the required resolution. Compound separation must meet the resolution specifications in Section 10.2.3.5 of this method and the identification specifications found in Section 11.4.3.4 of this method.

6.5.2.1 PCDD/PCDF Column. Gas chromatographic columns used to measure PCDD/PCDF should be capable of achieving separation of the 17 PCDD/PCDF target compounds from the nearest eluting target compound(s). The valley height resolution between 2,3,7,8-substituted TeCDD and TeCDF and the nearest eluting isomers must not exceed 25% of the taller of the two peaks. The valley height resolution between all other target PCDD/PCDF compounds and the nearest eluting targets (or interference) must not exceed 40% of the taller of the two peaks.

Note: Fishman, et al. (see Section 16.3 of this method) demonstrated that all TEF isomers can be fully differentiated from closely eluting isomers using either of two sets of non-polar and polar stationary phase combinations. One set consisted of 5% phenyl methylpolysiloxane (DB–5, HP–5MS, Rtx-5MS, Equity-5) and 50% cyanopropylmethyl, 50% phenylmethylsiloxane (DB–225, SP 2331) GC columns and the other set consisted of 5% phenyl, 94% methyl, 1% vinyl silicone bonded-phase (DB–5MS, ZB–5MS, VF–5MS, CP-Sil 8 CB LowBleed/MS) with 50% cyanopropylmethyl, 50% phenylmethylsiloxane (SP–2331).

6.5.2.2 PAH Column. Use column systems for measuring PAH that can achieve separation of anthracene and phenanthrene at m/z 178 such that the valley between the peaks does not exceed 50% of the taller of the two peaks, and benzo[*b*]fluoranthene and benzo[*k*]fluoranthene such that the valley between the peaks is less than 60% of the height of the taller peak. These requirements are achievable using a 30-m narrow bore (0.25 mm ID) 5% phenyl polysilphenylene-siloxane (BPX5 or equivalent) bonded-phase, fused-silica capillary column.

6.5.2.3 PCB Column. Use column systems for measuring PCB that can achieve unique resolution and identification of the toxics for determination of a TEQ_{PCB} using toxic equivalency factors (TEF). Resolution is shown by a valley between the peaks not exceeding 40% of the taller of the two peaks. Isomers may be unresolved if they have the same TEF and RRF and if these unresolved isomers are uniquely resolved from all other congeners. These requirements are achievable using several 30-meter (m) narrow

bore (0.25 mm ID) columns including 8% phenyl polycarborane-siloxane (HT8), DB–XLB, and poly (50% n-octyl/50% methyl siloxane) (SPB-Octyl). Quantification of unresolved isomers should use the nearest eluting target PCB pre-extraction standard in Appendix A of this method, unless otherwise specified in applicable rule, regulation, or permit.

Note: If all 209 PCB are analyzed the 17 toxic PCB congeners should be resolved and reported while the other PCB can be reported as totals by homolog, for example, total TrCB.

6.5.3 Mass Spectrometer. Instrument employing 28 to 70 electron volt ionization. The instrument and data system must be capable of repetitive monitoring of at least 12 exact m/z values with a mass resolution defined in Section 10.2.1 within the measurement mass range. The recommended lock-mass ions to be used for mass drift correction are presented in Tables 23–4, 23–5, and 23–6 of this method for PCDD/PCDF, PAH, and PCB, respectively, as applicable to target analytes. Mass drifts of 5 parts per million (ppm) or more can have serious effects on instrument performance.

6.5.4 Mass Spectrometer Data System. Use a data system compatible with the mass spectrometer and capable of sequencing and monitoring multiple groups of selected ions.

6.5.5 Analytical Balance. Use an analytical balance to measure within 0.1 milligram (mg).

7.0 Reagents, Media, and Standards

7.1 Filter. Glass fiber filters, without organic binder, exhibiting at least 99.95% efficiency (<0.05% penetration) on 0.3-micron dioctyl phthalate smoke particles.

7.1.1 Conduct a QC check on the filter lot prior to the field test to demonstrate that filters are free from contamination or interference by extracting and analyzing a minimum of three filters from each lot as follows. Spike with pre-extraction and pre-extraction filter recovery standards for target compounds to be measured and extract each filter separately with toluene as described in Section 11 of this method. After extraction, remove the filters and the solvent from the filters under clean conditions (*e.g.,* a clean nitrogen stream). Analyze the extracts according to the procedures in Section 11 of this method, including adding pre-analysis standard. This filter check analysis must meet the performance requirements in Section 13.1 of this method. Ongoing analysis of LMB can be used to fulfill this check. If criteria are not met for target compounds, repeat with additional filters from the lot or evaluate another lot.

7.2 Adsorbent Resin. Amberlite® XAD–2 resin. All adsorbent resin must meet the cleanliness criteria described for LMB in Section 13.1 of this method following the same extraction, concentration, cleanup, and analysis steps as field samples. This method recommends using the procedures provided in Appendix B to this method to clean the resin before use, if needed. However, this method allows alternative cleanup procedures that use automated extraction equipment if the adsorbent meets the required performance criteria described for LMB in Section 13.1 of this method.

7.2.1 Conduct a QC check on the cleaned adsorbent lot or batch following the extraction and analyses procedures in Section 11 of this method, including adding applicable labeled standards. The cleaned adsorbent must meet the criteria described for LMB in Section 13.1 of this method. An LMB conducted with an adsorbent lot or batch can serve this purpose.

7.2.2 Storage. Store adsorbent in a solvent-rinsed nonporous clean container and secure lid.

7.3 Glass Wool. Clean the glass wool to meet the specifications in Section 13.1 of this method. Glass wool is dried of the solvent and stored in a clean glass container with a PTFE-lined screw cap.

7.4 Water. Use deionized or distilled water meeting requirements in Section 13.1 of this method and store in its original container or in a clean glass container with a PTFE-lined screw cap.

7.5 Silica Gel. Indicating type for sampling, 6–16 mesh. If previously used, dry at 175 °C (347 °F) for two hours. Use new silica gel as received. As an alternative, use other types of desiccants (equivalent or better), subject to the approval of the Administrator.

7.6 Methylene Chloride. Pesticide grade or better.

7.7 Sample Recovery Reagents.

7.7.1 Acetone. Pesticide grade or better.

7.7.2 Toluene. Pesticide grade or better.

7.8 Sample Extraction and Cleanup.

7.8.1 Potassium Hydroxide. American Chemical Society (ACS) grade, 2% (weight/volume) in water.

7.8.2 Sodium Sulfate. Granulated or powdered, reagent grade. Evaluate for cleanliness prior to use with an LMB. The LMB must meet the requirements in Section 13.1 of this method for target compounds. Store in a clean glass container with a PTFE-lined screw cap.

7.8.3 Sulfuric Acid. Reagent grade.

7.8.4 Sodium Hydroxide. 1.0 N. Weigh 40 g of sodium hydroxide into a 1-liter volumetric flask. Dilute to 1 liter with water.

7.8.5 Hexane. Pesticide grade or better.

7.8.6 Methanol. Pesticide grade or better.

7.8.7 Toluene. Pesticide grade or better.

7.8.8 High-Boiling Alkanes Used as Keeper Solvents (*e.g.,* tetradecane, nonane, decane). Pesticide grade. **Note:** Lower homologous series alkanes (nonane or decane) are necessary for higher volatility targets such as MoCB and naphthalene to maintain retention during concentration procedures. However, do not take samples to dryness when using these lower alkane homologs.

7.8.9 Liquid Column Chromatography Packing Materials. Use the following column chromatography packing materials, as needed, to prepare sample extracts by fractionation and removal of interferences. Commercially prepacked cleaning columns may be available for this purpose. The liquid column chromatography packing materials must be adequate to clean the samples to be fit for purpose and meet the performance criteria of this method. All procedures for preparing column chromatography packing materials are recommendations shown to meet the performance specifications required for the recovery of labeled compounds described in Section 13 of this method.

7.8.9.1 Alumina. Use either acidic or basic alumina in the cleanup of sample extracts. Use the same type of alumina for all samples in an analytical sequence, including those used to demonstrate LMB performance.

7.8.9.1.1 Acidic Alumina (Sigma-Aldrich® 199966 or equivalent). Brockmann activity grade 1, 100–200 mesh. Prior to use, activate the alumina by heating for 12 hours at 130 °C (266 °F). Store in a desiccator. You may use pre-activated alumina purchased from a supplier as received.

7.8.9.1.2 Basic Alumina (Sigma-Aldrich® 19943 or equivalent). Brockmann activity grade 1. Activate by heating to 600 °C (1,112 °F) for a minimum of 24 hours. Do not heat to over 700 °C (1,292 °F) because this can lead to reduced capacity for retaining the target compounds. Store at 130 °C (266 °F) in a covered flask. Recommended storage time for acidic alumina is up to five days from baking. Use prepacked alumina columns immediately after opening the vacuum-sealed pouch or container.

7.8.9.2 Florisil®. Activated, 60–100 mesh recommended. Heat previously activated Florisil® in a glass container loosely covered with aluminum foil in an oven at 130 to 150 °C (266 to 302 °F) for a minimum of 24 hours. Allow to cool and store activated Florisil® silica in a desiccator.

7.8.9.3 Silica Gel. Use either activated, acid- or base-coated silica gel in the cleanup of sample extracts. Use the same type of silica gel for all samples in an analytical sequence, including those used to demonstrate LMB performance.

7.8.9.3.1 Activated Silica Gel. Supelco® 1–3651, Bio-Sil® A, 100–200 mesh (or equivalent). Prior to use, silica gel should be activated by solvent rinsing and heat activation. It is recommended to rinse with methylene chloride and activate the silica gel by heating for at least 1 hour at 180 °C (356 °F). After allowing to cool, rinse the silica gel sequentially with methanol and toluene. Heat the rinsed silica gel at 50 °C (122 °F) for 10 minutes, then increase the temperature gradually to 180 °C (356 °F) over 25 minutes and maintain the gel at this temperature for 90 minutes. Allow to cool in a desiccator to room temperature and store in a glass container with a PTFE-lined screw cap. Alternative conditioning procedure may be used if the performance criteria in Section 13.1 are met for target compounds.

7.8.9.3.2 Acidic Silica Gel (30% weight/weight). Combine 100 g of activated silica gel with 44 g of concentrated sulfuric acid in a clean screw-capped glass container and agitate thoroughly. Disperse the solids with a stirring rod until obtaining a uniform mixture of acid-coated silica gel. Store the mixture in a glass container with a PTFE-lined screw cap.

7.8.9.3.3 Basic Silica Gel. Combine 30 g of 1 N sodium hydroxide with 100 g of activated silica gel in a clean screw-capped glass container and agitate thoroughly. Disperse solids with a stirring rod until obtaining a uniform mixture of base-coated silica gel. Store the mixture in glass container with a PTFE-lined screw cap.

7.8.9.4 Carbon/Celite® 545 (or equivalent solid support). Use of a carbon-based column

cleanup material (*e.g.,* one of the many including for example Carbopack® B or C) to further remove non-planar impurities from the samples prior to analysis may be necessary. You must evaluate alternative carbon-based sorbents for this purpose prior to their use. An 18% weight/weight mixture of Carbopack® C and Celite® 545 has been used for this purpose and should be activated at 130 °C (266 °F) for a minimum of 6 hours. Allow to cool and store this mixture in a desiccator.

7.8.10 Nitrogen. 99.999% (ultra-high) purity.

7.9 Sample Analysis.

7.9.1 Helium. 99.999% (ultra-high) purity.

7.9.2 Spiking Standards. Prepare spiking standards quantitatively at a convenient concentration (*e.g.,* 10 nanograms (ng)/mL) or use commercial standards if available, to enable accurate spiking of a labeled standard at various stages of the sample and extract preparation. You may adjust the sample fortification concentrations from those recommended in Tables 23–7, 23–8, and 23–9 of this method to accommodate the concentration of target compounds anticipated in samples if the performance criteria in Section 13 of this method are met.

Note: When adjusting the fortification concentrations in the final sample extract, consider variables such as the aliquot of extract used and injection volume of samples and calibration.

7.9.3 Pre-Sampling Adsorbent Standard. Prepare stock standard solutions in nonane to enable spiking so that the isotopically labeled compounds in the final sample extract are at the concentration shown under the heading ''Pre-sampling Adsorbent Standard'' in Tables 23–7, 23–8, and 23–9 of this method, for applicable target compound classes.

7.9.4 Pre-extraction Filter Recovery Standard. Prepare stock standard solutions in nonane to enable spiking so that the isotopically labeled compounds in the final sample extract are at the concentration shown under the heading ''Pre-extraction Filter Recovery Standard'' in Tables 23–7, 23–8, and 23–9 of this method, for applicable target compound classes.

7.9.5 Pre-extraction Standard. Prepare stock standard solutions in nonane to enable spiking so that the isotopically labeled compounds in the final sample extract are at the concentration shown under the heading ''Pre-extraction Standard'' in Tables 23–7, 23–8, and 23–9 of this method, for applicable target compound classes.

7.9.6 Pre-analysis Standard. Prepare stock standard solutions in nonane to enable spiking so that the isotopically labeled compounds in the final sample extract are at the concentration shown under the heading ''Pre-analysis Standard'' in Tables 23–7, 23–8, and 23–9 of this method, for applicable target compound classes.

8.0 Sample Collection, Preservation, and Storage

8.1 Sampling. This method involves collection and recovery of trace concentrations of target semivolatile organic compounds. Therefore, field sampling and recovery staff should be trained and experienced in the best practices for handling and using organic solvents in field environments to recover and protect samples from contamination.

8.1.1 Pretest Preparation.

8.1.1.1 Cleaning Glassware. Clean glassware thoroughly before using. This section provides a recommended procedure, but any protocol that consistently results in contamination-free glassware meeting the LMB criteria in Section 13.1 of this method is acceptable.

8.1.1.1.1 Soak all glassware in hot soapy water (Alconox® or equivalent).

8.1.1.1.2 Rinse with hot tap water.

8.1.1.1.3 Rinse with deionized/distilled water.

8.1.1.1.4 Rinse with methanol.

8.1.1.1.5 Rinse with toluene.

8.1.1.1.6 Baking glassware up to 400 °C (752 °F) for a minimum of 2 hours may be necessary to remove contaminants or interferents from particularly dirty samples. Allow glassware to cool after baking.

Note: Repeated baking of glassware may cause active sites on the glass surface that may irreversibly adsorb target compounds.

8.1.1.1.7 Cover glassware openings with clean glass fitting caps or cleaned aluminum foil (see Section 6.2.6 of this method).

8.1.1.1.8 Rinse glassware immediately before use with acetone and toluene.

Note: To prepare heavily soiled glassware, remove surface residuals from the glassware by soaking in hot soapy water, rinsing with hot water, then soaking with a non-chromic acid oxidizing cleaning reagent in a strong acid (*e.g.,* NOCHROMIX® prepared according to manufacturer's directions). After the acid soak, rinse with hot water and repeat the cleaning procedures in Section 8.1.1.1 of this method.

8.1.1.2 Adsorbent Module. Load the modules in a clean area to avoid contamination. Fill a module with 20 to 40 g of XAD–2. Spike modules before the sampling event, but do not spike the modules in the field. Add the pre-sampling adsorbent standard to the top quarter of the adsorbent bed rather than onto the top or bottom of the adsorbent bed. Add sufficient spike (picograms (pg)/module) to result in the final sample theoretical concentrations specified in Tables 23–7, 23–8, and 23–9 of this method for PCDD/PCDF, PAH, and PCB, respectively, and to be above the lowest calibration concentration to ensure the standard recovery is quantitative. For samples with known or anticipated target compound concentration significantly higher or lower than the specified concentration in these tables, adjust the pre-sampling adsorbent standard concentration to the expected native compound concentration, but no less than 10 times the method detection limit (MDL). Follow the XAD–2 with cleaned glass wool and tightly cap both ends of the module. For analysis that includes PAH, use spiked modules within 14 days of preparation. See Table 23–10 of this method for storage conditions.

8.1.1.3 Sampling Train. Figure 23–1 of this method shows the complete sampling train. Follow the best practices by maintaining all sampling train components according to the procedure described in APTD–0576 Maintenance, Calibration, and Operation of Isokinetic Source-sampling Equipment (U.S. EPA 1972).

8.1.1.4 Silica Gel. Weigh several 200 to 300 g portions of silica gel in an air-tight container to the nearest 0.5 g. Record the total weight of the silica gel plus container, on the outside of each container. As an alternative, directly weigh the silica gel in its impinger or sampling holder just prior to sampling.

8.1.1.5 Filter. Check each filter against light for irregularities and flaws or pinhole leaks. Pack the filters flat in a clean glass container. Do not mark filters with ink or any other contaminating substance.

8.1.2 Preliminary Determinations. Use the procedures specified in Section 8.2 of Method 5 of Appendix A–3 to 40 CFR part 60.

8.1.2.1 Sample Volume. Unless otherwise specified in an applicable rule, regulation, or permit, sample for a minimum of 2 minutes at each traverse point. This method recommends sampling a minimum of 2.5 dry standard cubic meters (dscm).

8.1.2.2 For continuously operating processes, use the same sampling time at each traverse point. To avoid timekeeping errors, use an integer, or an integer plus one-half minute, for each traverse point.

8.1.2.3 For batch processes, determine the minimum operating cycle duration, dividing the sampling time evenly between the required numbers of traverse points. After sampling all traverse points once, sample each point again for the same duration of time per sampling point in reverse order until the operating cycle is completed. Sample all traverse points at least once during each test run.

8.1.3 Preparation of Sampling Train.

8.1.3.1 During field preparation and assembly of the sampling train, keep all train openings where contamination can enter sealed until just prior to assembly or until sampling is about to begin. To protect the adsorbent module from radiant heat and sunlight, you must wrap the module with aluminum foil or other suitable material capable of shielding the module from light. The XAD–2 adsorbent resin temperature must never exceed 50 °C (122 °F) because thermal decomposition will occur. Clean and prepare a complete set of sampling train components that will contact the sample for each sampling run, including one complete set to be used as a field train proof blank as a tool to evaluate equipment preparation and potential contamination during sample recovery as described in Section 9.6 of this method.

8.1.3.2 Place approximately 100 mL of water in the second and third impingers but leave the first and fourth impingers empty. Transfer approximately 200 g or more of silica gel from its container to the fifth impinger. Weigh each impinger and the adsorbent module, including the fitting caps, to the nearest 0.5 g using the field balance and record the weight for moisture determination. Remove the aluminum foil from the adsorbent module before weighing. Keep the module out of direct sunlight and rewrap the module with foil immediately after recording the module weight.

8.1.3.3 Using tweezers or clean disposable surgical gloves, place a filter in the filter holder. Be sure that the filter is properly centered, and the gasket properly placed, to prevent the sample gas stream from circumventing the filter. Check the filter for tears after completing the assembly.

8.1.3.4 Prepare the inside of the sampling probe and nozzle by brushing each component while rinsing three times each with acetone and toluene. Install the selected nozzle, using the connecting systems described in Section 6.1.2 of this method. Mark the probe with heat resistant tape or by some other method to denote the proper distance into the stack or duct for each sampling point. Assemble the train as shown in Figure 23–1 of this method. Orient the adsorbent module vertically so condensed moisture drains into the first impinger. See APTD–0576 Maintenance, Calibration, and Operation of Isokinetic Source-sampling Equipment (U.S. EPA 1972) for details.

8.1.3.5 Turn on the recirculation pump to the adsorbent module and condenser coil and begin monitoring the temperature of the gas entering the adsorbent module. Ensure proper temperature of the gas entering the adsorbent module before proceeding.

8.1.4 Leak-Check Procedure. Same as Section 8.4 of Method 5 of Appendix A–3 to 40 CFR part 60.

8.1.5 Sampling Train Operation. Same as Sections 8.5.1 through 8.5.9 of Method 5 of Appendix A–3 to 40 CFR part 60.

8.1.5.1 Monitor the filter temperature with a sensor and record the filter temperature during sampling to ensure a sample gas temperature exiting the filter of 120 °C ± 14 °C (248 °F ± 25 °F), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for an application of this method.

8.1.5.2 During testing, you must record the temperature of the gas entering the XAD–2 adsorbent module. The temperature of the gas must not exceed 20 °C (68 °F) for efficient capture of the target compounds.

8.2 Sample Recovery. Begin the cleanup procedure as soon as the probe is removed from the stack at the end of the sampling period. Seal the nozzle end of the sampling probe with PTFE tape or clean (*e.g.,* toluene rinsed) aluminum foil.

8.2.1 When the probe can be safely handled, wipe off all external particulate matter near the tip of the probe. Conduct a post-test leak check. Remove the probe from the train and close off both ends with PTFE tape or clean aluminum foil. Seal off the inlet to the train with PTFE tape, a ground glass cap, or clean aluminum foil.

8.2.2 Transfer the probe and impinger assembly to the cleanup area. This method recommends cleaning and enclosing this area to minimize the chances of losing or contaminating the sample. To avoid sample contamination and unnecessary exposure to toxic chemicals, smoking or eating in the sample recovery area shall not be allowed.

8.2.3 Inspect the train prior to and during disassembly. Note and record any abnormal conditions (*e.g.,* broken filters, colored impinger liquid). Recover and prepare samples for shipping as follows in Sections 8.2.4 through 8.2.12 of this method.

8.2.4 Container No. 1. Either seal the filter holder or carefully remove the filter from the filter holder and place it in its identified container. If it is necessary to remove the filter, use a pair of cleaned tweezers to handle the filter. If necessary, fold the filter such that the particulate cake is inside the fold. Carefully transfer to the container any particulate matter and filter fibers that adhere to the filter holder gasket by using a dry inert bristle brush and a sharp-edged blade. Seal the container and store cool (≤20 °C, 68 °F) for transport to the laboratory.

8.2.5 Adsorbent Module Sample. Remove the module from the train, tightly cover both ends with fitting caps and PTFE tape, remove the foil, drain the recirculating water from the module, weigh and record the module weight, and label the adsorbent module. Moisture measurement in the field using the Method 23 train requires weighing the adsorbent module before sampling and after sampling as part of the sample recovery.

8.2.6 Container No. 2. Quantitatively recover material deposited in the nozzle, the front half of the filter holder, and the cyclone, if used, by brushing while rinsing three times with acetone followed by three rinses with toluene. Collect all the rinses in Container No. 2.

8.2.7 Rinse the back half of the filter holder three times with acetone followed by three rinses with toluene. Rinse the sample transfer line between the filter and the condenser three times with acetone followed by three rinses with toluene. If using a separate condenser and adsorbent module, rinse the condenser three times with acetone followed by three rinses with toluene. Collect all the rinses in Container No. 2 and mark the level of the liquid on the container.

8.2.8 Moisture Weight. Weigh the adsorbent module, impingers, and silica gel impinger to within ±0.5 g using the field balance and record the weights. This information is required to calculate the moisture content of the effluent gas. For PCDD/PCDF-only measurements, discard the liquid after measuring and recording the weight.

8.2.9 Container No. 3. You must save and analyze impinger water samples if PAH and/or PCB are the target compounds. Quantitatively recover impinger water samples for analysis if PAH and/or PCB are the target compounds by rinsing three times with acetone followed by three rinses with toluene. Collect impinger water and rinses in Container No. 3 and mark the level of the liquid on the container.

8.2.10 Silica Gel. Note the color of the indicating silica gel to determine if it has been completely spent and report its condition on the field data sheet.

8.2.11 Field Sample Handling, Preservation, Storage, and Transport. Store all field samples temporarily in cool (≤20 °C, 68 °F) and dark conditions prior to transport to the laboratory. Ship samples cool (≤20 °C, 68 °F), shielded from ultraviolet light. In addition, follow the procedures in American Society for Testing and Materials (ASTM) D6911–15 (Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis) for all samples, where appropriate. To avoid contamination of the samples, pay special attention to cleanliness during transport, field handling, sampling, recovery, and laboratory analysis, as well as during preparation of the adsorbent cartridges.

8.2.12 Sample Custody. Proper procedures and documentation for sample chain of custody are critical to ensuring data integrity. Follow the chain of custody procedures in ASTM D4840–99(2018)e1 (Standard Guide for Sample Chain-of-Custody Procedures) for all samples (including field samples and blanks).

8.3 Sample Storage Conditions and Laboratory Hold Times.

8.3.1 Table 23–10 of this method summarizes the sample storage conditions and laboratory hold times.

8.3.2 Store sampling train rinses and filter samples in the dark at the storage conditions in Table 23–10 from the time the laboratory receives the samples until analysis.

8.3.3 You may store adsorbent samples for PCDD/PCDF or PCB analysis prior to extraction in the dark at 6 °C (43 °F) or less for up to one year from the time the laboratory receives the samples.

Note: The hold times listed in this method for adsorbent samples for PCDD/PCDF and PCB are recommendations as these compounds are very stable under the conditions listed in this section.

8.3.4 Protect adsorbent samples destined for PAH analysis from ultraviolet light. You may store adsorbent samples for PAH analysis in the dark at 6 °C (43 °F) or less for up to 30 days from the time the laboratory receives the samples.

8.3.5 Analyze PAH extracts within 40 days of extraction.

8.3.6 You may store sample aliquots including archived extracts of PCDD/PCDF, PAH and/or PCB samples in the dark at −10 °C (14 °F) or less for up to one year. Sample extracts must not be stored with pierced septa.

Note: The hold times listed in this method for sample aliquots for PCDD/PCDF and PCB are recommendations as these compounds are very stable under the conditions listed in this section.

9.0 Quality Control

Note: In recognition of advances that are occurring in sampling and analytical technology, and to allow the test team to overcome analyte sensitivity and matrix interferences, this method allows certain options to increase sample collection volume and to improve separations and the quality of the analysis results for target analytes. It is the laboratory's responsibility to establish the conditions for optimum sample extraction, cleanup, and concentration to meet the performance criteria in this method. However, you may not change the fundamental sampling and analysis techniques, isokinetic sampling with an adsorbent collection media followed by sample extraction, and HRMS detection and isotopic dilution quantification procedures. Section 13 of this method specifies the performance criteria to ensure that options employed for a sample set and analytes of interest are equal to or better than the

specificity of the techniques in this method. The minimum requirements of this method consist of the initial demonstration of capability (IDC) and ongoing QC requirements. The analysis team shall perform an IDC to demonstrate acceptable accuracy and precision with this method as described in Section 9.3. The ongoing QC includes performing CCVs and LMBs to evaluate an individual laboratory's performance against the criteria in this method. The method includes analysis of samples spiked with labeled compounds to evaluate and document data quality. Laboratory performance is compared to established performance criteria to determine if the results of analyses meet the performance characteristics and requirements of the method.

9.1 Record and report data and information that will allow an independent reviewer to validate the determination of each target compound concentration. Record and report the data as described in Sections 9.1.1 through 9.1.7 of this method and performance criteria results required in Section 13 of this method.

9.1.1 Sample numbers and other sample identifiers. Each sample must have a unique identifier.

9.1.2 Field sample volume.

9.1.3 Field sampling date.

9.1.4 Extraction dates.

9.1.5 Analysis dates and times.

9.1.6 Analysis sequence/run chronology.

9.1.7 Quantitation Reports.

9.1.7.1 This method does not consider EMPC-flagged data to be zero concentrations. Calculate and report the EMPC concentrations.

9.1.7.2 In determining compliance with any PCDD and PCDF standard developed using zero for values that are below the EDL of the method, including federal emission standards using Method 23 promulgated under 40 CFR parts 60 and 63 prior to March 20, 2023, use zero for the determination of total and weighted concentrations when the target compound is not detected. For all other circumstances, unless otherwise specified in applicable regulations, permits, or other requirements, when a target compound is measured at or below EDL, use EDL as the concentration for calculating compliance.

9.1.7.3 For each sample you must report EDLs, MDLs, LMBs and Field Train Proof Blank results and target compound analysis results.

9.2 Isotopically Labeled Standard Recovery.

9.2.1 Pre-sampling Adsorbent Standard and Pre-extraction Filter Recovery Standard Recoveries. Pre-sampling adsorbent standard and pre-extraction filter recovery standard recoveries must demonstrate on a per sample basis that recovery of the labeled standard achieved the requirements in Section 13 of this method. Recoveries below the acceptable range for the pre-sampling adsorbent standard may be an indication of breakthrough in the sampling train.

9.2.1.1 If the pre-sampling adsorbent standard average percent recovery is below 70%, the sampling run is not valid, and the stack test must be repeated. As an alternative, you do not have to repeat the stack test for invalid analyses if the pre-sampling adsorbent standard average percent recovery is 25% or more and you divide the final results by the fraction of the pre-sampling adsorbent standard average percent recovery.

9.2.1.2 If the percent recovery of all the pre-extraction filter recovery standard compounds is below 70%, you may reanalyze the sample. If the recovery is still below the limit, the filter sampling extraction is not valid, and you must repeat the stack or vent sampling and subsequent analysis.

9.2.2 Pre-extraction Standard Recoveries. Pre-extraction standard recoveries must demonstrate on a per sample basis that recovery of the labeled standard achieved the requirements in Section 13.15 of this method. If the recovery criteria are not met, you may reanalyze the sample. If the recovery criteria are still not met, the sampling run is not valid, and the stack test must be repeated. Recoveries outside the acceptable range for pre-extraction standard are an indication that sample preparation procedures did not adequately address sample and or sample matrix processing to recover native target compounds.

9.2.3 Pre-analysis Standard Response. Pre-analysis standard recoveries must demonstrate on a per sample basis that adequate labeled standard signal meets the requirements in Section 13.16 of this method. Add pre-analysis standard to every sample (including blanks, QC samples, and calibration solutions) in a known concentration. If the prepared samples do not meet the pre-analysis standard response criteria, you may reanalyze and/or prepare and analyze archive samples to attempt meeting requirements for the compounds that do not meet the pre-analysis standard response criteria. Poor sensitivity compared to initial calibration response may indicate injection errors or instrument drift.

9.3 Initial Demonstration of Capability (IDC). The IDC must be successfully performed prior to analyzing field samples by meeting the QC requirements in Table 23–18. The IDC must be repeated if changes are made to analytical parameters not previously validated during the IDC. This may include, for example, changing the sample volume, selecting alternate quantitation ions, extending the calibration range, adding additional pre-analysis standard, or adding additional pre-extraction standard. The same calibration range used during the IDC must be used for the analysis of field samples.

9.3.1 Perform initial calibration following the procedures in Section 10. The lowest calibration standard used to establish the initial calibration must not be less than three times the MDL. The initial calibration must meet performance criteria in Section 13.9.

9.3.2 Lowest Calibration Concentration Confirmation. Establish a target concentration for the lowest calibration standard based on the intended use of the method. The lowest calibration concentration may be established by a laboratory or programmatic lowest quantitative reporting requirement. The laboratory calibration curve must be set at or below this level. Perform seven replicate analyses of a calibration sample prepared at proposed lowest calibration concentration. The replicate analyses of the lowest calibration concentrations standards must meet the criteria in Sections 13.9 and 13.17.1.

Note: Consider that establishing the lowest calibration concentration too low may cause repeated failure of ongoing QC requirements.

9.3.3 Calculate Lowest Calibration Statistics. Calculate the mean and standard deviation for each analyte in these replicates (those used in Section 9.3.2). Determine the Half Range for the Prediction Interval of Results (HRPIR) using Equation 23–13. Calculate the Upper and Lower Limits for the Prediction Interval of Results (PIR) with Equations 23–14 and 23–15.

9.3.4 Lowest Calibration Point Acceptance Criteria. The laboratory's ability to measure analyte concentrations down to the lowest calibration point is confirmed if the criteria presented in Section 13.17.1 are met. If these criteria are not met, the lowest calibration point as been set too low and must be confirmed at a higher concentration.

9.3.5 Demonstration of Low System Background. Analyze an LMB after the highest standard in the calibration range. If an automated extraction system is used, an LMB must be extracted on each port. Performance criteria are presented in Section 13.1. Note: When using automated systems, the same systems must be used for samples and QC samples, such as blanks and resin checks.

9.3.6 Initial Calibration Verification. A QCS must be analyzed during the IDC, and then following each initial calibration thereafter (at a minimum quarterly). A QCS is a mid-level standard prepared from a second source standard or prepared from a source of standards different from the source of calibration standards. The purpose of the QCS is to verify the integrity of the primary calibration standards. The acceptance criterion is presented in Section 13.11.

9.3.7 MDL. Perform an MDL determination using a minimum of seven spiked combined filter/sorbent media samples, spiked within 2 to 10 times of the expected MDL, and seven LMBs (combined filter/sorbent media) through all the steps of the method following the requirements in 40 CFR part 136 Appendix B. Confirm target compounds meet the qualitative identification criteria in Sections 13.12 and 13.13. The criteria for the MDL determination are presented in Section 13.6.1 of this method.

9.3.8 MDL Confirmation. Confirm newly determined MDLs by preparing a low-level spiked combined filter/sorbent media sample by spiking the sorbent with native target compounds at 1 to 5 times the MDL and pre-extraction standard at the concentration used to analyze field samples and analyze. The criterion for the MDL confirmation is presented in Section 13.6.1 of this method.

9.3.9 Demonstration of Precision. Prepare, extract, and analyze seven replicate spiked samples in a valid Extraction Batch. Fortify the spiked samples near the midpoint of the initial calibration curve. The criterion is presented in Section 13.17.2 and Table 23–18. Demonstration is repeated for failed compounds only.

9.3.10 Demonstration of Accuracy. Using the same set of replicate data generated for

Section 9.3.9 of this method, calculate the average % recovery. The criterion is presented in Section 13.17.3 and Table 23–18. Demonstration is repeated for failed compounds only.

9.4 LMBs. Evaluate background contamination from glassware, equipment, solvents, standards, and media used for sample batches using an LMB prepared and analyzed identically to the field samples, including the same labeled standards, media, sodium sulfate, glass wool, glassware, solvents, etc. An LMB must be extracted with every batch of samples. Analyze an LMB at least once during each analytical sequence or every 12 hours, whichever period is shorter. If multiple LMB are required for an analytical sequence, report the initial LMB associated with each 12 hour analysis period.

9.5 EDL. Calculate the EDL using Equation 23–11 of this method.

Note: If the applicable compliance limit is total dioxin or total furan, report the sum of the EDLs for all the target compounds. If the applicable rule limit is a TEQ value, report the sum of the EDLs for all target compounds multiplied by their corresponding compound specific TEF.

9.6 Field Train Proof Blank Assessment. Conduct at least one field train proof blank for each test series at a single facility. A field train proof blank is used to evaluate equipment preparation and potential contamination during sample recovery and consists of a fully assembled train at the sampling site. Prepare and assemble the field train proof blank train in a manner identical to that described in Sections 8.1.3 and 8.1.4 of this method using glassware from the same preparation batch as the field samples. The field train proof blank train must remain assembled for the same average amount of time samples are collected. Recover the field train proof blank train as described in Section 8.2 of this method. Follow all subsequent steps for field train proof blank train sample preparation and analysis used for field samples including data reporting. Section 13.1 of this method describes the criteria for the field train proof blank.

10.0 Calibration and Standardization

10.1 Sampling System. Same as Sections 6.1 and 10.1 through 10.7 of Method 5 of Appendix A–3 to 40 CFR part 60.

10.2 HRGC/HRMS System.

10.2.1 Mass Resolution. Tune the HRMS instrument to a resolving power of at least 10,000 at 10% percent of the peak height or 25,000 at 50% percent of the peak height. The resolving power for PAH and PCB analysis may be 8,000 at 10% of the peak height or 15,000 at 50% of the peak height. Assess the resolution at three exact m/z's representing the low-, mid-, and high-m/z range of the masses used to measure the target compound class. You may use peak matching and the chosen perfluoro-kerosene (PFK) or perfluorotributylamine (FC43) reference peak to verify that the exact mass is within 5 ppm of the required value.

10.2.2 Initial Calibration. Calibrate the HRGC/HRMS system using a minimum of five concentrations over a range that brackets expected field sample concentrations and the concentration of isotopically labeled standards in spiked samples. Tables 23–11, 23–12, and/or 23–13 of this method show the calibration concentrations recommended by this method, as applicable to the target compound classes. Determine the initial relative response factors for the target compounds and isotopically labeled standards using the initial calibration. Criteria for the initial calibration is in Section 13.9 of this method.

10.2.2.1 Lock-Mass Ions. Tables 23–4, 23–5, and 23–6 of this method present the recommended mass spectrometer lock-mass ions for PCDD/PCDF, PAH, and PCB, respectively. The reference compounds PFK or FC43 have ions that may be selected as your lock-mass and QC check ions. Monitor the QC check ions specified in these tables to verify instrument stability during the analysis (see Section 13.8 for performance criteria). Additional cleanup of the sample extract (or archive extract) and reanalysis is necessary for failure to maintain the lock-mass during analysis.

10.2.2.2 The relative standard deviation (RSD) for the mean calibration relative response factor from each of the unlabeled analytes and isotopically labeled compounds used in an analysis must be less than or equal to the values in Table 23–14 of this method.

10.2.2.3 The signal-to-noise (S/N) ratio for the GC/MS signal present in every selected ion current profile must be greater than or equal to 10 in all concentrations of calibration standards for unlabeled targets and isotopically labeled standards. The ion abundance ratios must be within the control limits in Table 23–15 of this method.

Note: An interference with PFK m/z 223.9872 may preclude meeting 10:1 S/N for the DiCB congeners at the optional Cal 1 level (Table 23–11). If this interference occurs, 10:1 S/N must be met at the Cal 2 level.

10.2.3 Continuing Calibration Verification.

10.2.3.1 Prepare the CCV standard at the same time as the batch of field samples using the same labeled standards. Prepare CCV standards at mid-level of the calibration (C3 level from Tables 23–11, 23–12, or 23–13 of this method). Inject a CCV standard, for the target compound class, at least once every 12 hours during an analysis sequence. Calculate the RRF for each compound and compare each RRF to the corresponding mean RRF obtained during the initial calibration. The RRF for each native compound measured in a CCV must not deviate from the initial calibration RRF by more than the limits shown in Table 23–14.

10.2.3.2 The ion abundance ratios must be within the allowable control limits shown in Table 23–15 of this method.

10.2.3.3 The S/N ratio for the GC/MS signal present in every selected ion current profile must be greater than or equal to 10.

10.2.3.4 Repeat the initial calibration when there is a failure to meet the requirements for acceptable CCV standard analysis.

10.2.3.5 Column Separation Check. Use the results from a CCV to verify and document the resolution required in Section 13.2, 13.3, or 13.4 of this method for the target compound classes analyzed with this method. If target compounds are not sufficiently resolved to meet the requirement, an analysis on a confirmation column is recommended (see Section 13.5 of this method).

10.2.3.6 If you use a confirmation column, perform the resolution check in Section 10.2.3.5 of this method to document the required resolution on the confirmation column. See Section 13.5 of this method on confirmation columns, if needed.

11.0 Analysis Procedure

11.1 Sample Extraction and Concentration. The sample extraction procedures in this method are the same for PCDD, PCDF, PCB and PAH targets. Figure 23–4 provides a flow chart showing sample container combination and extraction steps. Do not allow samples and extracts destined for PAH or PCB analysis to concentrate to dryness because the lower molecular weight PAH and the mono- through tri-chlorobiphenyls may be totally or partially lost. Note: Rotary evaporation is applicable when analyzing for PCDD/PCDF only. Snyder column apparatus is recommended when analyzing for PAH and PCB.

11.1.1 Optional Soxhlet Precleaning. Place an extraction thimble (see Section 6.3.3.3 of this method) and a plug of glass wool into the Soxhlet apparatus equipped with a Dean-Stark trap, charge the apparatus with toluene, and reflux for a minimum of 3 hours. Remove the toluene and discard it. Remove the extraction thimble from the extraction system and place it in a glass beaker to catch the solvent rinses from sample transfer to the extraction thimble. Retain the clean glass wool plug. Alternatively, confirm that the LMB for associated reagents, materials, and media meets the performance requirements in Section 13.1 of this method.

11.1.2 Container No. 1 (Filter) Preparation. Spike the filter with the appropriate pre-extraction filter recovery standard to result in the final sample extract concentrations shown in Tables 23–7, 23–8, and 23–9 of this method taking care that all spike liquid is distributed on the filter. Allow the filter to dry enough to prevent overspill, then transfer the filter and the contents of Container No. 1 directly to the glass extraction thimble in the glass solvent rinse catch beaker so that the filter will be completely immersed in the solvent during extraction.

11.1.3 Adsorbent Module. Spike the adsorbent with the appropriate pre-extraction standard to result in the final sample extract concentrations shown in Tables 23–7, 23–8, and 23–9 of this method, as applicable, spiked into the adsorbent, not on top of the adsorbent. Transfer the adsorbent material to the glass extraction thimble in the glass solvent rinse catch beaker. Rinse the module into the thimble in the beaker with the contents of Container No. 1. Alternatively, suspend the adsorbent module directly over the extraction thimble in a beaker, then, using a wash bottle containing methanol, flush the XAD–2 into the thimble onto the filter. Thoroughly rinse the interior of the glass module that contained the XAD–2 with toluene.

11.1.4 Container No. 2 (Acetone and Toluene Rinses). Concentrate the sample to a volume of no less than 5 mL. Concentrate samples containing toluene using a heating mantle and three-ball Snyder column or a rotary evaporator. Rinse sample Container No. 2 three times with small portions of toluene and add these to the concentrated solution and concentrate further to no less than 5 mL. This residue contains particulate matter removed in the rinse of the train probe and nozzle. Rinse the concentrated material from Container No. 2 into the glass extraction thimble containing the filter and the XAD–2 resin.

11.1.5 Transfer the solvent contained in the glass solvent rinse catch beaker to the extraction apparatus solvent reservoir. Rinse the beaker into the Soxhlet extraction apparatus solvent reservoir three times with small portions of toluene.

11.1.6 Container No. 3 (Impinger Water and Rinses). For PAH and PCB analysis, transfer the contents of Container No. 3 to a separatory funnel. Adjust to pH 2 with 6 N sulfuric acid, if necessary. Rinse the sample container with three successive 10-mL aliquots of the toluene and add these rinses to the separatory funnel. Extract the sample by vigorously shaking the separatory funnel for 5 minutes. After complete separation of the phases, remove the solvent and filter it through a bed of precleaned, dry sodium sulfate into the Soxhlet extraction apparatus solvent reservoir. Repeat the extraction step two additional times. Adjust the pH to 11 with 6 N sodium hydroxide, re-extract the impinger water and rinses, and filter it through a bed of precleaned, dry sodium sulfate into the Soxhlet extraction apparatus solvent reservoir. Rinse the sodium sulfate into the extraction apparatus solvent reservoir with fresh solvent and discard the sodium sulfate.

11.1.7 Add the appropriate pre-extraction standard for the target compound classes (to result in the final sample extract concentrations shown in Tables 23–7, 23–8, and 23–9 of this method) to the extraction thimble containing the combined filter and adsorbent sample fractions. Cover the contents of the extraction thimble with the cleaned glass wool plug to prevent the XAD–2 resin from splashing into the solvent reservoir of the extractor. Place the extraction thimble into the Soxhlet extraction apparatus.

11.1.8 Pour additional toluene to fill the solvent reservoir to approximately two-thirds capacity. Add PTFE boiling chips and assemble the apparatus.

11.1.9 Adjust the heat source to cause the extractor to cycle approximately three times per hour. Extract the sample for sufficient time to meet the pre-extraction standard recovery performance criteria in Section 13.15 of this method. The solvent should cycle completely through the system a minimum of 48 times.

11.2 Sample Aliquots for Cleanup and Analysis.

11.2.1 After extraction, allow the Soxhlet apparatus to cool.

11.2.2 Initial Extract Concentration. You may perform an initial concentration of the sample extract using the techniques (*e.g.,* Kuderna Danish, rotary evaporation, nitrogen blowdown) found to recover the pre-extraction standard sufficient to meet the performance criteria in Section 13.15 of this method. Concentrate initial extracts in toluene using a heating mantle and three-ball Snyder column or a rotary evaporator. Concentrate the field train proof blank and LMB samples in the same manner as samples.

Note: To meet isotopically labeled standard recoveries for low molecular weight PCB and PAH, do not evaporate samples to dryness and do not use a rotary evaporator to concentrate extracts.

11.2.3 Allow the sample extract to cool. You should use a minimum of one half of the sample extract for PCDD/PCDF analysis. You may archive the remaining sample extract or further split the sample extract for PCB and/or PAH analysis and archive.

Note: If using amount other than half the sample extract, adjust the spiking amount of the labeled standards accordingly.

11.2.4 If necessary, further concentrate the sample extract for cleanup and analysis using concentration techniques (*e.g.,* Kuderna Danish, rotary evaporation, nitrogen blowdown) found to recover the pre-extraction standard sufficient to meet the performance criteria in Section 13 of this method.

11.3 Sample Cleanup and Fractionation. You may process a separate aliquot/split of the sample extract for each of the compound classes analyzed by this method. Sample cleanup for each compound class may include techniques in addition to column chromatography such as acid/base back-extraction, Gel Permeation Chromatography, or high-performance liquid chromatography (HPLC) to isolate target compounds from interferences. This section includes a description of column chromatography shown to meet the performance criteria in Sections 9.2 and 13 of this method. The following sample cleanup and fractionation procedures are recommended but not required. You may modify cleanup column dimensions to meet manual or automated cleanup procedures as technology changes and improves. You must evaluate the cleanup and fractionation procedures used to confirm acceptable recovery of isotopically labeled standards. The alternative procedures must provide sufficient cleanup to meet method identification criteria (Section 11.4.3.4 of this method) and recovery criteria (Section 9.2 of this method). Section 13 of this method summarizes the method performance requirements.

Note: Recommendations in this section provide a cleanup approach that may allow multiple compound class measurement from a single aliquot of the original sample extract. Typically, Florisil® and alumina are used to separate PAH and PCDPE from PCDD and PCDF target compounds. Use acid, neutral, and basic silica gel and cleanup procedures to remove nonpolar and polar interferences from samples destined for PCB and PCDD/PCDF analysis. Use Carbopack®/Celite® (or other equivalent carbon-based column material) to remove other nonpolar interferences.

11.3.1 PAH and PCDPE Fractionation and Cleanup. You may use a Florisil® column to remove PAH and PCDPE from the sample extract. You may also fractionate sample extracts using Florisil® as the first cleanup step to separate PAH for analysis.

Note: High concentrations of PAH may interfere, leading to failure of performance criteria for PCDD/PCDF or PCB analysis.

11.3.1.1 Pack a 6-mm ID chromatographic column or equivalent diameter glass pipet with a glass wool plug followed by approximately 1.5 g (approximately 2 mL) of activated Florisil®. Add approximately 1 cm (approximately 1 mL) of anhydrous sodium sulfate followed by a glass wool plug to the head of the column. Pre-elute the column with 10 mL of methylene chloride followed by 10 mL of hexane and discard the eluate.

11.3.1.2 When the solvent is within 1 mm of the packing, transfer the concentrated extract (up to 5 mL) to the top of the Florisil® column, rinse the sample container twice with 1 to 2 mL of hexane, adding each rinse to the column, and elute the column with 35 mL of 5% dichloromethane in hexane. This fraction (Fraction 1) should contain target PCB, and selected hydrocarbons and chlorinated monoaromatic compounds.

11.3.1.3 Elute the column with 35 mL of 15% of dichloromethane in hexane and collect the eluate. This fraction (Fraction 2) should contain target PCDD/PCDF compounds.

11.3.1.4 Elute the column with 50 mL of 50% dichloromethane in hexane. The fraction (Fraction 3) should contain target PAH.

11.3.1.5 If necessary to remove any remaining polar organic compounds, elute the column with 70 mL of 15% acetone in hexane.

11.3.2 PCDD/PCDF and PCB Fractionation and Cleanup. You may remove PAH from the original aliquot of sample extract used for PCDD/PCDF analysis as described in Section 11.3.1 of this method. Design the column cleanup chromatography for PCDD/PCDF and PCB such that two consecutive fractions are collected (one with PCDD/PCDF and one with PCB) without impacting the detection limits. Depending on the source and sample matrix of the original sample, one or more of the following column cleanup approaches may be necessary to further remove polyhalogenated diphenyl ethers. You may use any number of permutations found in the referenced literature for this cleanup if the pre-extraction standard recoveries from field and LMB samples meet the associated performance criteria in Section 13 of this method. Alternatively, you may use an automated cleanup approach that meets the labeled spike recovery requirements in Section 13 of this method.

11.3.2.1 Silica Gel Column Chromatography. Pack one end of a glass column, approximately 20 mm ID × 230 mm long, with glass wool. Add in sequence to the glass column, 1 g of silica gel, 2 g of sodium hydroxide impregnated silica gel, 1 g of silica gel, 4 g of acid-modified silica gel, 1 g of silica gel, and 1 cm layer of anhydrous sodium sulfate. Pre-elute the column with 30 to 50 mL of hexane leaving a small quantity of hexane above the sodium sulfate layer. Discard the pre-elution hexane. Add the

sample extract, dissolved in 5 mL of hexane to the head of the column. Allow the sample to flow into the column leaving a small quantity of hexane above the sodium sulfate layer. Rinse the extract container with two additional 5-mL rinses of hexane and apply each rinse to the column separately as the previous addition elutes. Elute the column with an additional 90 mL of hexane and retain the entire eluate. Concentrate this solution to a volume of about 1 mL using the nitrogen evaporative concentrator (see Section 6.3.5 of this method).

11.3.2.2 Silver Nitrate Silica Gel Column Chromatography. Pack a column (6 mm ID, 150 mm in length) sequentially with 1 g of silica gel and 1 g of 10% silver nitrate silica gel followed by a layer of about 10 mm of sodium sulfate (anhydrous). Wash the column sufficiently with hexane, elute until the liquid level reaches to the upper end of the column, and then transfer the concentrated sample (about 5 mL). Rinse the container several times with a small amount of hexane, elute with 200 mL of hexane at a flow rate about 2.5 mL/min (approximately one drop per second) to elute PCDD/PCDF.

11.3.2.3 Multi-layer Silica Gel Column Chromatography. You may use a multi-layer silica gel column in place of separate silica columns. Pack a column of 20 mm ID and 300 mm in length sequentially by the dry pack method with 0.9 g of silica gel, 3.0 g of 2% potassium hydroxide silica gel, 0.9 g of silica gel, 4.5 g of 44% sulfuric acid silica gel, 6.0 g of 22% sulfuric acid silica gel, 0.9 g of silica gel, 3.0 g of 10% silver nitrate silica gel, 2.0 g of silica gel and 6.0 g of sodium sulfate (anhydrous). Wash the column sufficiently with hexane, elute until the liquid level reaches to the upper end of the column, and then load the sample solution. Rinse the container several times with a small amount of hexane, elute with 150–200 mL of hexane at a flow rate about 2.5 mL/min (approximately one drop per second) to elute PCDD/PCDF.

11.3.2.4 Basic Alumina Column Chromatography. Pack a column (20 mm ID, 300 mm in length) with approximately 6 to 12 g of basic alumina. Pre-elute the column with 50 to 100 mL of hexane. Transfer the concentrated extract from the previous column cleanup to the top of the basic alumina column. Allow the sample to flow into the column leaving a small quantity of solvent above the top of the bed. Rinse the extract container with two additional 1-mL rinses of hexane and apply each rinse to the column separately as the previous addition elutes. Elute the column with 100 mL hexane to remove the interferences. Elute the PCDD/PCDF from the column with 20 to 40 mL of 50% methylene chloride in hexane. The ratio of methylene chloride to hexane may vary depending on the activity of the alumina used in the column preparation. Do not let the head of the column go without solvent. The first 100 mL hexane eluate is not used for subsequent PCDD/PCDF analysis. The eluate is concentrated to approximately 0.5 mL using the nitrogen evaporative concentrator.

11.3.2.5 Carbopack® C/Celite® 545 Column or Equivalent. Cut both ends from a 10 mL disposable Pasteur pipette (see Section 6.4.1 of this method) to produce a 10 cm column. Fire-polish both ends and flare both ends if desired. Insert a glass wool plug at one end and pack the column with 0.55 g of Carbopack®/Celite® (see Section 7.8.9.4 of this method) to form an adsorbent bed approximately 2 cm long. Insert a glass wool plug on top of the bed to hold the adsorbent in place. Pre-elute the column with 5 mL of toluene followed by 2 mL of methylene chloride:methanol:toluene (15:4:1 volume/volume (v/v)), 1 mL of methylene chloride:cyclohexane (1:1 v/v), and 5 mL of hexane. If the flow rate of eluate exceeds 0.5 mL/minute, discard the column. Do not let the head of the column go without solvent. Add the sample extract to the column. Rinse the sample container twice with 1 mL portions of hexane and apply separately to the column. Apply 2 mL of hexane to the head of the column to complete the transfer. Elute the interfering compounds with two 3 mL portions of hexane, 2 mL of methylene chloride:cyclohexane (1:1 v/v), and 2 mL of methylene chloride:methanol:toluene (15:4:1 v/v). Discard the eluate. Invert the column and elute the PCDD/PCDF with 20 mL of toluene. If carbon particles are present in the eluate, filter through glass-fiber filter paper. Concentrate the eluate to approximately 0.5 mL using the nitrogen evaporative concentrator for further cleanup or analysis by HRGC/HRMS.

11.4 PCDD, PCDF, PCB and PAH Analysis.

11.4.1 Analyze the sample extract with an HRGC/HRMS using the instrumental parameters in Sections 11.4.2 and 11.4.3 of this method.

11.4.1.1 Immediately prior to analysis, add an aliquot (typically 20 microliters (µl)) of the pre-analysis standard to result in the final sample extract concentrations in Tables 23–7, 23–8, and 23–9 of this method to each sample as appropriate for the compounds you are measuring by this method.

11.4.1.2 Inject an aliquot of the sample extract into the GC, typically 1 µl. You may perform separate analyses using different GC columns for each of the target compound classes. Perform calibration and sample analysis for each target compound class using the same instrument operating conditions including injection volume.

11.4.1.2.1 If target compounds are not resolved sufficiently from other target compounds or interferences in the sample to meet the requirements in Section 10.2.3.5 or 10.2.3.6 of this method, as applicable to the compound class being analyzed, or as otherwise specified in an applicable regulation, permit, or other requirement, analyze sample (or another aliquot of the sample) using an alternative column that provides elution order to uniquely quantify the target compounds subject to interference on the first GC column.

11.4.1.2.2 You may use column systems other than those recommended in this method provided the analyst is able to demonstrate, using calibration and CCVs, that the alternative column system is able to meet the applicable specifications of Section 10.2.3.5 or 10.2.3.6 of this method.

11.4.2 Example Gas Chromatograph Operating Conditions.

11.4.2.1 Injector. Configured for capillary column, splitless, 250 °C (482 °F).

11.4.2.2 Carrier Gas. Helium, 1 to 2 mL/min.

11.4.2.3 Oven. Optimize the GC temperature program to achieve the required separation and target compound recovery for the GC column in use. Table 23–16 of this method presents the typical conditions for a DB5–MS column.

11.4.3 High-Resolution Mass Spectrometer.

11.4.3.1 Ionization Mode. Electron ionization.

11.4.3.2 Source Temperature. Maintain the source temperature in the range of 250 to 300 °C (482 to 572 °F).

11.4.3.3 Ion Monitoring Mode. Tables 23–4, 23–5, and 23–6 of this method summarize the various ions to be monitored for PCDD/PCDF, PAH, and PCB, respectively.

11.4.3.4 Identification Criteria for Target Compounds. Use the following identification criteria for the characterization of target compounds in this method. The available native and isotopically labeled standards allow the unique identification of all PCDD/PCDF, PAH, and selected PCB congeners analyzed in this method. Also see Sections 13.12 and 13.13 of this method for identification criteria for PCDD/PCDF/PCB and PAH target compounds, respectively.

11.4.3.4.1 For PCDD/PCDF and PCB, Table 23–15 of this method provides acceptance limits for the integrated ion abundance ratio of primary and secondary target compound ions. When the ion abundance ratio for a target analyte is outside the performance criteria, you may reanalyze samples on an alternative GC column to resolve chemical interferences, tune the mass spectrometer to operate at a higher mass resolution to discriminate against the interference(s), and/or further cleanup an archived sample to remove the interference(s). Report analysis results as an EMPC when a response meets identification criteria except the ion abundance ratio criteria or when a peak representing a PCDPE has been detected at the retention time. This method does not consider EMPC-flagged data to be zero concentrations.

Note: Some EMPCs may be caused by poor ion statistics when the concentration of the target compound is at or near the DL.

11.4.3.4.2 The retention time for the analytes must be within 3 seconds of the corresponding labeled pre-extraction standard.

11.4.3.4.3 The signals for the two exact masses in Tables 23–4 and 23–6 of this method for PCDD/PCDF and PCB, respectively, must be present and must reach their maximum response within two seconds of each other.

11.4.3.4.4 Identify and quantify specific target compounds or isomers that do not have corresponding pre-extraction standard compounds by comparing to the pre-extraction standard of the same compound class with the nearest retention time to target compound.

11.4.3.4.5 For the identification of specific PCB congeners, the retention time of the native congener must be within 0.006 relative retention time (RRT) units of the pre-extraction standard.

11.4.3.4.6 For qualitative identification, the S/N ratio for the GC signal present in every selected ion current profile for native compound response must be greater than or equal to 2.5.

11.4.3.4.7 The separation of target compounds, including 2,3,7,8–TeCDD and 2,3,7,8–TeCDF, must satisfy the separation criteria in Section 10.2.3.5 of this method and all the identification criteria specified in Sections 11.4.3.4.1 through 11.4.3.4.6 of this method. See Section 13.5 of this method on confirmation columns, if needed.

11.4.3.4.8 Chlorodiphenyl Ether Interference. If chromatographic peaks are detected at the retention time of any PCDF in any of the m/z channels used to monitor PCDPE, there is evidence of a positive interference and you may opt to flag data noting the interference and keep the value to calculate PCDF concentration as EMPC or reanalyze to remove or shift the interference. This method recommends alumina (see Section 11.3.2.4 of this method) and Florisil® (see Section 11.3.1 of this method) liquid column chromatography packing materials for removal of PCDPE during sample cleanup.

11.4.3.4.9 The recommended MS lock-mass ions are specified in Tables 23–4, 23–5, and 23–6 of this method for PCDD/PCDF, PAH, and PCB, respectively. Monitor the QC check ions to verify instrument stability during the analysis. If the QC check ion signal varies by more than 25% from the average response across the run, flag results for all isomers at corresponding retention time as the lock-mass ions or QC check ions. You have the option to reanalyze after additional cleanup on the sample (or an archived portion of the sample if the archive is available), or after dilution of the sample. Alternately, determine through additional quality review whether the target analyte and its corresponding isotopically labeled standard are equally affected by the change in lock-mass ions and/or QC check ions. When you reanalyze a sample, ensure all concentration calculations are reported from the reanalyzed sample.

11.4.3.4.10 For the identification of PAH, the RRT of each native to its labeled compound must be within 0.006 RRT units compared to the corresponding RRTs in the continuing calibration. The signals for the characteristic ion listed in Table 23–5 of this method must be present.

11.4.3.5 Quantitation. Measure the response of each native target compound and the corresponding pre-extraction standard. Using the CCV RRF, calculate the mass of each target compound, using equations in Section 12.7 of this method. Use the pre-extraction standard to correct the native target compounds result for variations in performance of the extraction, cleanup, and concentration steps of the analysis. Recovery of pre-extraction standard must meet the minimum specifications in Section 9.2. of this method to ensure that the method performance and reliability have not been compromised by unacceptable losses during sample processing. Table 23–17 of this method shows the assignments for pre-extraction standard compounds for use in calculating the response factor and the concentrations of PCB. Recoveries of all labeled standard compounds must meet the minimum recovery specifications in Section 13 of this method. Note: Unacceptably low recoveries can be an indication of a sample processing step that caused the low recoveries, such as spiking errors.

11.4.3.5.1 Use Equation 23–7 to calculate the amount of each target compound or group in the sample.

11.4.3.5.2 Use Equation 23–8 to calculate the concentration per dscm of each target compound or group in the gas.

11.4.3.5.3 Quantify native PCDD and PCDF in its homologous series using the corresponding native and pre-extraction standard response in its homologous series. For example, use $^{13}C_{12}$-2,3,7,8-TeCDD to calculate the concentrations of all other tetra chlorinated isomers.

11.4.3.5.4 As an option or as required or specified in applicable regulations, permits, or other requirements, you may quantify any or all other PCB congeners as resolved or coeluting combinations using the RRF of the nearest eluting native target PCB in the same homolog group and the pre-extraction standard assigned in Appendix A to this method.

11.4.3.5.5 As an option or as required or specified in applicable regulations, permits, or other requirements, report the total concentration of congeners at a given level of chlorination (homolog; *i.e.,* total TrCB, total PeCB, total HxCB, etc.) by summing the concentrations of all congeners identified in the retention time window for the homologs as assigned in Appendix A to this method.

11.4.3.5.6 As an option or if required in an applicable regulation, permit or other requirement, total PCB may be reported by summing all congeners identified at all window-defining congeners (WDCs) as assigned in Appendix A to this method.

12.0 Data Analysis and Calculations

Note: Same as Section 12 of Method 5 of Appendix A–3 to 40 CFR part 60, with the following additions.

12.1 Nomenclature.

$A1_n$ = Integrated ion current of the primary m/z values for the target native compound.
$A1_{pe}$ = Integrated ion current of the primary m/z values for the pre-extraction standard compound (assigned in Tables 23–4, 23–5, and 23–6 of this method).
$A1_{pa}$ = Integrated ion current of the primary m/z values for the pre-analysis standard compound.
$A2_n$ = Integrated ion current of the secondary m/z values for the target native compound. For PAH $A2_n = 0$.
$A2_{pe}$ = Integrated ion current of the secondary m/z's for the pre-extraction standard compound. For PAH $A2_l = 0$.
$A2_{pa}$ = Integrated ion current of the secondary m/z values for the pre-analysis standard compound.
C_i = Mass of compound i in the sample, pg.
C_{idscm} = Concentration of target native compound i in the emission gas, pg/dscm.
C_T = Total mass of target compounds in the sample, pg/sample.
dscm = Dry standard cubic meters of gas volume sample measured by the dry gas meter, corrected to standard conditions.
H_{ai} = Summed heights of the noise for each quantitation ion for native target compounds.
H_{ci} = Summed heights of the noise at the primary and secondary m/z's of the pre-extraction standard i.
L_{PIR} = Lower limit for the prediction interval of results.
n = Number of values.
PD = Percent Difference in the RRF of the continuing calibration verification compared to the average RRF of the initial calibration, %.
Q_n = Quantity of the target native compound, pg.
Q_{pe} = Quantity of the pre-extraction standard, pg.
Q_{pa} = Quantity of the pre-analysis standard, pg.
R = Recovery of pre-sampling adsorbent standard and pre-extraction filter recovery standard, %.
R_{pe} = Recovery of pre-extraction standard, %.
RRF_i = Relative response factor of a native target compound or pre-sampling adsorbent standard and pre-extraction filter recovery standard at calibration level i.
RRF_{pe} = Relative response factor of a pre-extraction standard compound.
RRF_{ccv} = Relative response factor of a native target compound or pre-sampling adsorbent standard and pre-extraction filter recovery standard in the continuing calibration verification.
RSD = Relative standard deviation, in this case, of RRFs over the calibration levels, %.
SD = Standard deviation.
SD_{RRF} = Standard deviation of initial calibration RRFs.
U_{PIR} = Upper limit for the prediction interval of results.
WDC = Window-defining congener representing an isotopically labeled compound that defines the beginning or end of a retention time window bracketing a target homolog.

12.2 Individual Compound RRF for Each Calibration Level i. Equation 23–1 for the response factor of each target native compound relative to its labeled pre-extraction standard analog includes the integrated ion current of both the primary and secondary m/z values for each compound in the calibration standard, excluding PAH, which use only primary m/z values. Use Equation 23–2 to calculate the RRF for pre-extraction standard.

$$RRF_i = \frac{(A1_n + A2_n)Q_{pe}}{(A1_{pe}+A2_{pe})Q_n} \quad \text{Eq. 23-1}$$

$$RRF_{pe} = \frac{(A1_{pe} + A2_{pe})Q_{pa}}{(A1_{pa}+A2_{pa})Q_{pe}} \quad \text{Eq. 23-2}$$

Note: the units for Q_{pe} and Q_n in Eq. 23–1 and the units for Q_{pa} and Q_{pe} in Equation 23–2 must be the same.

12.3 Average RRF for Each Compound Over the Minimum of Five Calibration Levels.

$$\overline{RRF} = \frac{1}{n}\sum_{i=1}^{n} RRF_i \quad \text{Eq. 23-3}$$

12.4 Percent RSD of the RRFs for a Compound Over the Calibration Levels. The requirement for the initial calibration RSD is in Section 13.9 and Table 23–14 of this method.

$$\%RSD = \frac{SD_{RRF}}{\overline{RRF}} x\ 100\% \quad \text{Eq. 23-4}$$

12.5 Standard Deviation of the RRFs for a Compound Over the Calibration Levels.

$$SD_{RRF} = \sqrt{\sum_{i=1}^{n} \frac{(x_i - \bar{x})^2}{n-1}} \quad \text{Eq. 23-5}$$

12.6 Percent Difference of the RRF of the Continuing Calibration Verification Compared to the Average RRF from the Initial Calibration for Each Target Compound. Use Equation 23–1 to calculate the RRF for the continuing calibration verification for comparison to the average RRF from the initial calibration. The requirement for the continuing calibration verification % difference is in Section 13.10 and Table 23–14 of this method.

$$PD = \frac{RRF_{ccv} - \overline{RRF}}{\overline{RRF}} x\ 100\% \quad \text{Eq. 23-6}$$

12.7 Amount of Individual Target Compound i in the Sample by Isotope Dilution (pg). This equation corrects for the target native compound recovery based on its labeled pre-extraction standard analog. This equation is also used to calculate the amount of pre-sampling adsorbent standard and pre-extraction filter recovery standard recovered.

$$C_i = \left[\frac{Q_{pe}\,(A1_n + A2_n)}{(A1_{pe}+A2_{pe})RRF_{CCV}}\right] \quad \text{Eq. 23-7}$$

Note: For the quantitation of the pre-sampling adsorbent standard and the pre-extraction filter recovery standard, use a corresponding pre-extraction isomer (or homolog) with the closest retention time.

12.8 Concentration of the Individual Target Compound or Group i in the Emission Gas (pg/dscm). The total concentration of a target compound group in the sample can be calculated by substituting C_T from Eq. 23–12 for C_i in Equation 23–8.

$$C_{idscm} = \frac{C_i}{dscm} \quad \text{Eq. 23-8}$$

12.9 Recovery of Labeled Compound Standards. Use Equation 23–9 to determine the recovery of pre-sampling adsorbent standard and the pre-extraction filter recovery standard. Use Equation 23–10 to determine the recovery of the pre-extraction standard. The recovery performance criteria for these standards are in Sections 13.14, 13.15, and 13.16 of this method.

$$R = \frac{conc.\ found}{conc.\ spiked}\ x\ 100\% \qquad \text{Eq. 23-9}$$

$$R_{pe} = \left[\frac{Q_{pa}\,(A1_{pe}+A2_{pe})}{(A1_{pa}+A2_{pa})(Q_{pe})(RRF_{pe})}\right] x\ 100\% \qquad \text{Eq. 23-10}$$

Note: Recovery may be calculated based on mass instead of concentration, as needed.

Note: R_{pe} must be corrected for the fraction of the original sample extract used for analysis. (*e.g.*, if half of the extract is used for analysis of the target class, R_{pe} must be multiplied by a factor of 2).

12.10 Estimated Detection Limit (EDL).

$$EDL = \frac{2.5\,(H_{ai})\,Q_{pe}}{H_{ci}\,x\,RRF_{CCV}} \qquad \text{Eq. 23-11}$$

12.11 Total Target Compound Mass.

$$C_T = \sum_{i=1}^{n} C_i \qquad \text{Eq. 23-12}$$

Note: Unless otherwise specified in applicable regulations, permits or other requirements, count any target compounds reported as non-detected as EDL when calculating the concentration of target compounds in the sample.

12.12 Upper and Lower Limits for the Prediction Interval of Results (PIR)

Half Range (HR) for the Predication Interval of Results

$$HR_{PIR} = (3.963)(S) \qquad \text{Eq. 23-13}$$

Note: 3.963 is a constant value for seven replicates.

Upper and Lower Limits for the Prediction Interval of Results

$$U_{PIR} = \left[\frac{(Mean+HR_{PIR})}{Spike\ Concentration}\right] 100\% \qquad \text{Eq. 23-14}$$

$$L_{PIR} = \left[\frac{(Mean-HR_{PIR})}{Spike\ Concentration}\right] 100\% \qquad \text{Eq. 23-15}$$

13.0 Method Performance

Data generated with this method must be fit for purpose. Applicable results of method performance criteria in this section must be reported. Consequences of failed quality criteria are provided with the criteria in this section.

13.1 Background Assessment—Field Train Proof Blank, LMB and Materials. Determine the contribution to target compound concentration from reagents, media and glassware used to make target compound measurements. Conduct at least one field train proof blank for each test series at a single facility. Analyze at least one LMB sample during an analytical sequence or every 12 hours, whichever is shorter. Native target compound concentrations in the field train proof blank, LMB and materials assessment must be less than or equal to three times the EDL of the method or 10 times lower than the quantitation limit required by the end use of the data (*e.g.*, compliance limit or other limits set by consent decree or permit), whichever is higher. The field train proof blank, LMB and materials assessment must also meet the performance specifications in Tables 23–7, 23–8, and 23–9, as applicable to the compound target list.

13.2 GC column or column systems used to measure PCDD/PCDF must meet the column separation requirements in Section 6.5.2.1 of this method and the applicable requirements in Sections 10.2.3.5 and 11.4.3.4 of this method using the continuing calibration verification. Failure to meet this chromatographic resolution criterion requires data from this analysis to be flagged explaining the potential bias of the results.

13.3 GC column or column systems used to measure PAH must meet the column separation requirements in Section 6.5.2.2 of this method and the applicable requirements in Sections 10.2.3.5 and 11.4.3.4 of this method using the continuing calibration check. Failure to meet this chromatographic resolution criterion requires data from this analysis to be flagged explaining the potential bias of the results.

13.4 GC column or column systems used to measure PCB must meet the column separation requirements in Section 6.5.2.3 of this method and the applicable requirements in Sections 10.2.3.5 and 11.4.3.4 of this method using the continuing calibration check and be able to achieve unique resolution and identification of the toxics for determination of a TEQ_{PCB}. The rule requiring the use of this method will establish which WHO TEF to use. Failure to meet this chromatographic resolution criterion requires data from this analysis to be flagged explaining the potential bias of the results.

13.5 Confirmation Column. If target compounds are not sufficiently resolved from other target compounds or interferences in the sample to meet the requirements for target compounds in Sections 13.2, 13.3, and/or 13.4 of this method, analyze sample (or another aliquot of the sample) using an alternative column that provides elution order to uniquely quantify the target compounds subject to interference on the first GC column. When using a confirmation column, document the required resolution.

13.6 Detection Limits.

13.6.1 MDL. The MDLs are determined following the procedures in Section 9.3.7 of this method. MDLs are confirmed by

preparing and analyzing a spiked sample (spiked at 1 to 5 times the determined MDL, see Section 9.3.8), then confirm that the target compounds meet the qualitative identification criteria in Section 11.4.3.4 of this method. If the MDL confirmation criteria are not met, the MDL determination is repeated with a higher spike concentration until criteria are met.

13.6.2 EDL. If the sample specific EDLs are less than 50% of the emission standard, the EDLs are acceptable.

13.7 Tune. The groups of monitored ions are listed in Tables 23–4, 23–5, and 23–6 of this method, as applicable for the target compound class. Tune the instrument to meet the required resolving power in Section 10.2.1 for the desired target compound class. Assess the resolution at three exact m/z's representing the low-, mid-, and high-m/z range of the masses used to measure the target compound class. You may use peak matching and the chosen PFK (or FC43) reference peak to verify that the exact mass is within 5 ppm of the required value.

13.8 Lock-Mass Ions. The MS lock-mass and QC check ions in Tables 23–4, 23–5, and 23–6 of this method are recommended for PCDD/PCDF, PCB, or PAH, respectively. The reference compounds PFK or FC43 have ions that may be selected as your lock-mass and QC check ions. Monitor the QC check ions specified in these tables to verify instrument stability during the analysis; these must not vary >25% from the average response. Additional cleanup on sample extract (or archive extract) and reanalysis is necessary for failure to maintain lock-mass during analysis.

13.9 Initial Calibration.

13.9.1 The RSD for mean RRF from each of the target analytes and labeled standards in the calibration samples must not exceed the values in Table 23–14 of this method.

13.9.2 The S/N in every selected ion current profile must be ≥10 for all unlabeled targets and labeled standards in the calibration samples.

13.9.3 The ion abundance ratios must be within the control limits in Table 23–15 of this method.

13.10 Continuing Calibration Verification.

13.10.1 The RRF for each unlabeled and labeled compound measured in a CCV must not deviate from the initial calibration RRF by more than the limits shown in Table 23–14 of this method.

13.10.2 The ion abundance ratios must be within the control limits in Table 23–15 of this method.

13.10.3 The S/N ratio for the GC/MS signal present in every selected ion current profile must be greater than or equal to 10.

13.10.4 Repeat the initial calibration when there is a failure to meet the requirements for an acceptable CCV analysis.

13.10.5 Column Separation Check. Use the results from a CCV to verify and document the resolution required in Sections 13.2, 13.3, or 13.4 of this method for the target compound classes analyzed with this method. The separation criteria are applicable to all the compounds in a target class whether analyzed by a single or multiple GC columns. If a confirmation column is used, document required resolution (see Section 13.5).

13.11 QCS. A QCS must be analyzed during the IDC and after initial calibrations (at a minimum quarterly). The acceptance criterion for the QCS is 70–130% of the true value. If the accuracy for any analyte fails the recovery criterion, prepare a fresh standard dilution and repeat. If the freshly prepared QCS fails, determine the cause, recalibrate the instrument if necessary and reanalyze the QCS.

13.12 Compound Identification for PCDD/PCDF and PCB.

13.12.1 Target compounds must have ion abundance ratios within the control limits in Table 23–15 of this method. PAH target compounds have single ion identifiers with no ion abundance ratio requirement. Report analysis results as an EMPC when a response meets identification criteria but fails the ion abundance ratio criteria or when a peak representing a PCDPE has been detected at the target compound retention time.

13.12.2 The retention time for the analytes must be within 3 seconds of the corresponding pre-extraction standard.

13.12.3 The monitored ions, shown in Table 23–4 of this method for a given PCDD/PCDF, must reach their maximum response within 2 seconds of each other.

13.12.4 The monitored ions, shown in Table 23–6 of this method for a given PCB, must reach their maximum response within 2 seconds of each other.

13.12.5 For the identification of specific PCB, the RRT of the native congener must be within 0.006 RRT units of the pre-extraction standard RRT.

13.12.6 The S/N ratio for the monitored ions for native compounds must be greater than or equal to 2.5.

13.12.7 Identify and quantify isomers that do not have corresponding pre-extraction standard compounds by comparing to the pre-extraction standard of the same compound class with the nearest retention time to the target compound.

13.12.8 If chromatographic peaks are detected at the retention time of any PCDD/PCDF in any of the m/z channels used to monitor PCDPE, there is evidence of interference and positive bias. Data must be flagged to indicate an interference. You may report the total with bias for the affected target. To reduce the bias, you may use a confirmatory column or perform additional clean up on an archived sample followed by reanalysis.

13.13 Compound Identification for PAH.

13.13.1 The signals for the characteristic ion listed in Table 23–5 of this method must be present.

13.13.2 The RRT between each native and labeled compound must be within 0.006 RRT units.

13.14 Pre-sampling Adsorbent Standard and Pre-extraction Filter Recovery Standard Recovery. Recoveries of pre-sampling adsorbent standard added to the sample and pre-extraction filter recovery standard added to the filter must be between 70 and 130% (see Tables 23–7, 23–8, and 23–9 of this method).

13.14.1 If the recovery of all the pre-sampling adsorbent standard compounds is below 70%, the sampling runs are not valid, and you must repeat the stack or vent sampling. As an alternative, you do not have to repeat the test if the average pre-sampling adsorbent standard recovery is 25% or more and you divide the final results by the average fraction of pre-sampling adsorbent standard recovery.

13.14.2 If the recovery of all the pre-extraction filter recovery standard compounds is below 70%, you may reanalyze the sample. If the recovery criteria are still not met, the sampling recovery is not valid, and you must repeat the stack or vent sampling.

13.15 Pre-extraction Standard Recovery. Recoveries of all pre-extraction standard compounds added to the sample must be between 20 to 130% for PCDD/PCDF and PAH (see Tables 23–7 and 23–8 of this method) and between 20 to 145% for PCB (see Table 23–9 of this method). If the recovery criteria are not met, you may reanalyze the sample and/or prepare and analyze the archive sample. If the recovery criteria are still not met, the sampling run is not valid, and the stack test must be repeated.

13.16 Pre-analysis Standard Response. Response of all pre-analysis standard compounds must show a S/N for every selected ion current profile of ≥ 10. If the minimum response is not met, you must reanalyze the sample. Poor sensitivity compared to initial calibration response may indicate injection errors or instrument drift.

13.17 IDC—Lowest calibration concentration, Demonstration of precision, Demonstration of accuracy.

13.17.1 Lowest calibration concentration. The Upper PIR Limit must be less than, or equal, to 150%; and the Lower PIR Limit must be greater than, or equal to, 50%. If these criteria are not met, the lowest calibration point has been set too low and must be confirmed at a higher concentration.

13.17.2 Demonstration of precision. The percent relative standard deviation (%RSD) of the concentrations from the replicate analyses must be less than 20% for all target analytes. Demonstration would be repeated for failed compounds only.

13.17.3 Demonstration of accuracy. The average % recovery for each target analyte must be within 70 to 130%. Demonstration would be repeated for failed compounds only.

13.18 Requirements for Equivalency. The Administrator considers any modification of this method, beyond those expressly permitted in this method as options, to be a major modification subject to application and approval of alternative test procedures following EPA Guidance Document 22 currently found at: *https://www.epa.gov/emc/emc-guideline-documents.*

13.19 Records. As part of the laboratory's quality system, the laboratory must maintain records of modifications to this method.

14.0 Pollution Prevention

The target compounds used as standards in this method are prepared in extremely small amounts and pose little threat to the environment when managed properly. Prepare standards in volumes consistent with laboratory use to minimize the disposal of excess volumes of expired standards.

15.0 Waste Management

15.1 The laboratory is responsible for complying with all federal, state, and local regulations governing waste management, particularly the hazardous waste identification rules and land disposal restrictions, and for protecting the air, water, and land by minimizing and controlling all releases from fume hoods and bench operations. The laboratory must also comply with any sewage discharge permits and regulations. The EPA's *Environmental Management Guide for Small Laboratories* (EPA 233–B–98–001) provides an overview of requirements.

15.2 Samples containing hydrogen chloride or sulfuric acid to pH <2 are hazardous and must be handled and disposed in accordance with federal, state, and local regulations.

15.3 For further information on waste management, consult *The Waste Management Manual for Laboratory Personnel* and *Less is Better-Laboratory Chemical Management for Waste Reduction,* available from the American Chemical Society's Department of Government Relations and Science Policy, 1155 16th Street NW, Washington, DC 20036.

16.0 Bibliography

1. American Society of Mechanical Engineers. Analytical Procedures to Assay Stack Effluent Samples and Residual Combustion Products for Polychlorinated Dibenzo-p-Dioxins (PCDD) and Polychlorinated Dibenzofurans (PCDF). Prepared for the U.S. Department of Energy and U.S. Environmental Protection Agency. Washington, DC. December 1984. 23 p.
2. American Society of Mechanical Engineers. Sampling for the Determination of Chlorinated Organic Compounds in Stack Emissions. Prepared for U.S. Department of Energy and U.S. Environmental Protection Agency. Washington DC. December 1984. 25 p.
3. Fishman, V.N., Martin, G.D. and Lamparski, L.L., Comparison of a variety of gas chromatographic columns with different polarities for the separation of chlorinated dibenzo-p-dioxins and dibenzofurans by high-resolution mass spectrometry, Journal of Chromatography A 1139 (2007) 285–300.
4. International Agency for Research on Cancer. Environmental Carcinogens Methods of Analysis and Exposure Measurement, Volume 11—Polychlorinated Dioxins and Dibenzofurans. IARC Scientific Publications No. 108, 1991.
5. Stieglitz, L., Zwick, G., Roth, W. Investigation of different treatment techniques for PCDD/PCDF in fly ash. Chemosphere 15: 1135–1140; 1986.
6. Triangle Laboratories. Case Study: Analysis of Samples for the Presence of Tetra Through Octachloro-p-Dibenzodioxins and Dibenzofurans. Research Triangle Park, NC. 1988. 26 p.
7. U.S. Environmental Protection Agency. Method 8290A—Polychlorinated Dibenzo-p-dioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by High-Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS), Revision 1. February 2007. In: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW–846. Washington, DC.
8. U.S. Environmental Protection Agency. Office of Air Programs Publication No. APTD–0576: Maintenance, Calibration, and Operation of Isokinetic Source Sampling Equipment. Research Triangle Park, NC. March 1972.
9. U.S. Environmental Protection Agency. Method 1625C-Semivolatile Organic Compounds by Isotope Dilution GCMS. June 1989.
10. U.S. Environmental Protection Agency. Method 1613B-Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS. October 1994.
11. U.S. Environmental Protection Agency. Method 1668C-Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS. April 2010.
12. Tondeur, Y., Nestrick, T., Silva, Héctor A., Vining, B., Hart, J. Analytical procedures for the determination of polychlorinated-p-dioxins, polychlorinated dibenzofurans, and hexachlorobenzene in pentachlorophenol, Chemosphere Volume 80, Issue 2, June 2010 pages 157–164.
13. U.S. Environmental Protection Agency. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2. EPA 821–R–16–006. December 2016.
14. Tondeur Y, Niederhut WJ, Missler SR. A hybrid HRGC/MS/MS Method for the Characterization of Tetrachlorodibenzo-p-Dioxins in Environmental Samples; Bio. Med. and Environ. Mass Spectr. 14, pages 449–456, 1987.
15. Gianluca R., Mosca S., Guerriero E., Rotatori M. Development of a new automated clean-up system for the simultaneous analysis of polychlorinated dibenzo-*p*-dioxins (PCDDs), dibenzofurans (PCDFs) and 'dioxin-like' polychlorinated biphenyls (dl-PCB) in flue gas emissions by GPC–SPE. J. Environ. Monit. 14, pages 1082–1090, 2012.
16. U.S. Environmental Protection Agency. The National Dioxin Air Monitoring Network (NDAMN) Report of the Results of Atmospheric Measurements of Polychlorinated Dibenzo-*p*-Dioxins (PCDDs), Polychlorinated Dibenzofurans (PCDFs), and Dioxin-like Polychlorinated Biphenyl (PCBs) in Rural and Remote Areas of the United States from June 1998 through November 2004. EPA/600/R–13/183F. August 2013.
17. Guo, Y., Kannan, K. Analytical Methods for the Measurement of Legacy and Emerging Persistent Organic Pollutants in Complex Sample Matrices. Comprehensive Analytical Chemistry. Vol. 67. January 2015.
18. U.S. Environmental Protection Agency. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review. EPA–540–R–11–016. September 2011.

17.0 Tables, Diagrams, Flowcharts, and Validation Data

TABLE 23–1—POLYCHLORINATED DIBENZO-*p*-DIOXIN AND POLYCHLORINATED DIBENZOFURAN TARGET ANALYTES

Polychlorinated dibenzo-*p*-dioxins	CAS[a] Registry No.	Polychlorinated dibenzofurans	CAS[a] Registry No.
2,3,7,8-TeCDD	1746–01–6	2,3,7,8-TeCDF	51207–31–9
1,2,3,7,8-PeCDD	40321–76–4	1,2,3,7,8-PeCDF	57117–41–6
1,2,3,4,7,8-HxCDD	39227–28–6	2,3,4,7,8-PeCDF	57117–31–4
1,2,3,6,7,8-HxCDD	57653–85–7	1,2,3,4,7,8-HxCDF	70648–26–9
1,2,3,7,8,9-HxCDD	19408–74–3	1,2,3,6,7,8-HxCDF	57117–44–9
1,2,3,4,6,7,8-HpCDD	35822–46–9	1,2,3,7,8,9-HxCDF	72918–21–9
Total TeCDD	41903–57–5	2,3,4,6,7,8-HxCDF	60851–34–5
Total PeCDD	36088–22–9	1,2,3,4,6,7,8-HpCDF	67562–39–4
Total HxCDD	34465–46–8	1,2,3,4,7,8,9-HpCDF	55673–89–7
Total HpCDD	37871–00–4	Total TeCDF	55722–27–5
OCDD	3268–87–9	Total PeCDF	30402–15–4
		Total HxCDF	55684–94–1
		Total HpCDF	38998–75–3
		OCDF	39001–02–0

[a] Chemical Abstract Service.

TABLE 23–2—POLYCYCLIC AROMATIC HYDROCARBON TARGET ANALYTES

Polycyclic aromatic hydrocarbons	CAS[a] Registry No.	Polycyclic aromatic hydrocarbons	CAS[a] Registry No.
Naphthalene	91–20–3	Chrysene	218–01–9
2-Methylnaphthalene	91–57–6	Benzo[*b*]fluoranthene	205–99–2
Acenaphthylene	208–96–8	Benzo[*k*]fluoranthene	207–08–9
Acenaphthene	83–32–9	Perylene	198–55–8
Fluorene	86–73–7	Benzo[*a*]pyrene	50–32–8
Anthracene	120–12–7	Benzo[*e*]pyrene	192–97–2
Phenanthrene	85–01–8	Benzo[*g,h,i*]perylene	191–24–2
Fluoranthene	206–44–0	Indeno[*1,2,3-cd*]pyrene	193–39–5
Pyrene	129–00–0	Dibenz[*a,h*]anthracene	53–70–3
Benz[*a*]anthracene	56–55–3		

[a] Chemical Abstract Service.

TABLE 23–3—POLYCHLORINATED BIPHENYL TARGET ANALYTES

PCB congener	BZ No.[a]	CAS[b] Registry No.	PCB congener	BZ No.[a]	CAS[b] Registry No.
2,4′-DiCB	8	34883–43–7	2,2′,3,3′,4,4′-HxCB	128	38380–07–3
2,2′,5-TrCB	18	37680–65–2	2,2′,3,4,4′,5′-HxCB	138	35065–28–2
2,4,4′-TrCB	28	7012–37–5	2,2′,4,4′,5,5′-HxCB	153	35065–27–1
2,2′,3,5′-TeCB	44	41464–39–5	2,3,3′,4,4′,5-HxCB	156	38380–08–4
2,2′,5,5′-TeCB	52	35693–99–3	2,3,3′,4,4′,5′-HxCB	157	69782–90–7
2,3′,4,4′-TeCB	66	32598–10–0	2,3′,4,4′,5,5′-HxCB	167	52663–72–6
3,3′,4,4′-TeCB	77	32598–13–3	3,3′,4,4′,5,5′-HxCB	169	32774–16–6
3,4,4′,5-TeCB	81	70362–50–4	2,2′,3,3′,4,4′,5-HpCB	170	35065–30–6
2,2′,4,5,5′-PeCB	101	37680–73–2	2,2′,3,4,4′,5,5′-HpCB	180	35065–29–3
2,3,3′,4,4′-PeCB	105	32598–14–4	2,2′,3,4′,5,5′,6-HpCB	187	52663–68–0
2,3,4,4′,5-PeCB	114	74472–37–0	2,3,3′,4,4′,5,5′-HpCB	189	39635–31–9
2,3′,4,4′,5-PeCB	118	31508–00–6	2,2′,3,3′,4,4′,5,6-OcCB	195	52663–78–2
2′,3,4,4′,5-PeCB	123	65510–44–3	2,2′,3,3′,4,4′,5,5′,6-NoCB	206	40186–72–9
3,3′,4,4′,5-PeCB	126	57465–28–8	2,2′,3,3′,4,4′,5,5′,6,6′-DeCB	209	2051–24–3

[a] BZ No.: Ballschmiter and Zell 1980, or International Union of Pure and Applied Chemistry (IUPAC) number.
[b] Chemical Abstract Service.

TABLE 23–4—ELEMENTAL COMPOSITIONS AND EXACT MASSES OF THE IONS MONITORED BY HIGH-RESOLUTION MASS SPECTROMETRY FOR PCDD AND PCDF

Mass[a]	Ion type[b]	Elemental composition	Target analyte[b]	Mass[a]	Ion type[b]	Elemental composition	Target analyte[b]
263.9871	LOCK	$C_5F_{10}N$	FC43	383.8639	M	$^{13}C_{12}H_2{}^{35}Cl_6O$	HxCDF (S).
292.9825	LOCK	C_7F_{11}	PFK	385.8610	M+2	$^{13}C_{12}H_2{}^{35}Cl_5{}^{37}ClO$	HxCDF (S).
303.9016	M	$C_{12}H_4{}^{35}Cl_4O$	TeCDF	389.8157	M+2	$C_{12}H_2{}^{35}Cl_5{}^{37}ClO_2$	HxCDD.
305.8987	M+2	$C_{12}H_4{}^{35}Cl{}^{37}ClO$	TeCDF	391.8127	M+4	$C_{12}H_2{}^{35}Cl_4{}^{37}Cl_2O_2$	HxCDD.
313.9839	QC	$C_6F_{12}N$	FC43	392.9760	LOCK	C_9F_{15}	PFK.
315.9419	M	$^{13}C_{12}H_4{}^{35}Cl_4O$	TeCDF (S)	401.8559	M+2	$^{13}C_{12}H_2{}^{35}Cl_5{}^{37}ClO_2$	HxCDD (S).
316.9745	M+2	$^{13}C_{12}H_4{}^{35}Cl_3{}^{37}ClO$	TeCDF (S)	403.8529	M+4	$^{13}C_{12}H_2{}^{35}Cl_4{}^{37}Cl_2O$	HxCDD (S).
317.9389	M+2	$^{13}C_{12}H_4{}^{35}Cl_2{}^{37}ClO$	TeCDF (S)	425.9775	QC	$C_9F_{16}N$	FC43.
319.8965	M	$C_{12}H_4{}^{35}Cl_4O_2$	TeCDD	445.7555	M+4	$C_{12}H_2{}^{35}Cl_6{}^{37}Cl_2O$	OCDPE.
321.8936	M+2	$C_{12}H_4{}^{35}Cl_3{}^{37}ClO_2$	TeCDD	407.7818	M+2	$C_{12}H{}^{35}Cl_6{}^{37}ClO$	HpCDF.
325.9839	QC	$C_7F_{12}N$	FC43	409.7789	M+4	$C_{12}H{}^{35}Cl_5{}^{37}Cl_2O$	HpCDF.
330.9792	QC	C_7F_{13}	PFK	417.8253	M	$^{13}C_{12}H{}^{35}Cl_7O$	HpCDF (S).
331.9368	M	$^{13}C_{12}H_4{}^{35}Cl_4O_2$	TeCDD (S)	419.8220	M+2	$^{13}C_{12}H{}^{35}Cl_6{}^{37}ClO$	HpCDF (S).
333.9339	M+2	$^{13}C_{12}H_4{}^{35}Cl_3{}^{37}ClO_2$	TeCDD (S)	423.7766	M+2	$C_{12}H{}^{35}Cl_6{}^{37}ClO_2$	HpCDD.
339.8597	M+2	$C_{12}H_3{}^{35}Cl_4{}^{37}ClO$	PeCDF	425.7737	M+4	$C_{12}H{}^{35}Cl_5{}^{37}Cl_2O_2$	HpCDD.
341.8567	M+4	$C_{12}H_3{}^{35}Cl_3{}^{37}Cl_2O$	PeCDF	430.9729	QC	C_9F_{17}	PFK.
354.9792	LOCK	C_9F_{13}	PFK	435.8169	M+2	$^{13}C_{12}H{}^{35}Cl_6{}^{37}ClO_2$	HpCDD (S).
351.9000	M+2	$^{13}C_{12}H_3{}^{35}Cl_4{}^{37}ClO$	PeCDF (S)	437.8140	M+4	$^{13}C_{12}H{}^{35}Cl_5{}^{37}Cl_2O_2$	HpCDD (S).
353.8970	M+4	$^{13}C_{12}H_3{}^{35}Cl_3{}^{37}Cl_2O$	PeCDF (S)	442.9728	LOCK	$C_{10}F_{17}$	PFK.
355.8546	M+2	$C_{12}H_3{}^{35}Cl_4{}^{37}ClO_2$	PeCDD	479.7165	M+4	$C_{12}H{}^{35}Cl_7{}^{37}Cl_2O$	NCPDE.
357.8516	M+4	$C_{12}H_3{}^{35}Cl_3{}^{37}Cl_2O_2$	PeCDD	430.9729	LOCK	C_9F_{17}	PFK.
367.8949	M+2	$^{13}C_{12}H_3{}^{35}Cl_4{}^{37}ClO_2$	PeCDD (S)	441.7428	M+2	$C_{12}{}^{35}Cl_7{}^{37}ClO$	OCDF.
369.8919	M+4	$^{13}C_{12}H_3{}^{35}Cl_3{}^{37}Cl_2O_2$	PeCDD (S)	443.7399	M+4	$C_{12}{}^{35}Cl_6{}^{37}Cl_2O$	OCDF.
375.9807	QC	$C_8F_{14}N$	FC43	457.7377	M+2	$C_{12}{}^{35}Cl_7{}^{37}ClO_2$	OCDD.
375.8364	M+2	$C_{12}H_4{}^{35}Cl_5{}^{37}ClO$	HxCDPE	459.7348	M+4	$C_{12}{}^{35}Cl_6{}^{37}Cl_2O_2$	OCDD.
409.7974	M+2	$C_{12}H_3{}^{35}Cl_6{}^{37}ClO$	HpCPDE	463.9743	QC	$C_9F_{18}N$	FC43.
373.8208	M+2	$C_{12}H_235Cl_5{}^{37}ClO$	HxCDF	469.7779	M+2	$^{13}C_{12}{}^{35}Cl_7{}^{37}ClO_2$	OCDD (S).
375.8178	M+4	$C_{12}H_2{}^{35}Cl_4{}^{37}Cl_2O$	HxCDF	471.7750	M+4	$^{13}C_{12}{}^{35}Cl_6{}^{37}Cl_2O_2$	OCDD (S).
375.9807	QC	$C_8F_{14}N$	FC43	513.6775	M+4	$C_{12}{}^{35}Cl_8{}^{37}Cl_2O_2$	DCDPE.
				442.9728	QC	$C_{10}F_{17}$	PFK.

[a] The following nuclidic masses were used to calculate exact masses: H = 1.007825, C = 12.000000, ^{13}C = 13.003355, F = 18.9984, O = 15.994915, ^{35}Cl = 34.968853, ^{37}Cl = 36.965903.
[b] (S) = Labeled Standard. LOCK = Lock-Mass Ion PFK or FC43. QC = Quality Control Check Ion. Note: Consider monitoring 328 m/z if a high level of PCB is expected.

TABLE 23–5—ELEMENTAL COMPOSITIONS AND EXACT MASSES OF THE IONS MONITORED BY HIGH-RESOLUTION MASS SPECTROMETRY FOR PAH

Aromatic ring No.	Mass [a]	Ion type [b]	Elemental composition	Target analyte
2	128.0624	M	$C_{10}H_8$	Naphthalene.
	130.9920	LOCK		PFK/FC43.
2	134.0828	M	$^{13}C_6{}^{12}C_4H_8$	$^{13}C_6$-Naphthalene.
2	142.078	M	$C_{11}H_{10}$	2-Methylnaphthalene.
2	148.0984	M	$^{13}C_6{}^{12}C_5H_{10}$	$^{13}C_6$-2-Methylnaphthalene.
2	152.0624	M	$C_{12}H_8$	Acenaphthylene.
2	158.0828	M	$^{13}C_6{}^{12}C_6H_8$	$^{13}C_6$-Acenaphthylene.
2	154.078	M	$C_{12}H_{10}$	Acenaphthene.
2	160.078	M	$^{13}C_6{}^{12}C_6H_{10}$	$^{13}C_6$-Acenaphthene.
2	166.078	M	$C_{13}H_{10}$	Fluorene.
	169.988	QC		PFK/FC43.
2	172.0984	M	$^{13}C_6{}^{12}C_7H_{10}$	$^{13}C_6$-Fluorene.
3	178.078	M	$C_{14}H_{10}$	Phenanthrene.
3	184.0984	M	$^{13}C_6\ ^{12}C_8H_{10}$	$^{13}C_6$-Phenanthrene.
3	178.078	M	$C_{14}H_{10}$	Anthracene.
3	184.078	M	$^{13}C_6{}^{12}C_8H_{10}$	$^{13}C_6$-Anthracene.
3	202.078	M	$C_{16}H_{10}$	Fluoranthene.
	204.9888	QC		PFK.
3	208.0984	M	$^{13}C_6{}^{12}C_{10}H_{10}$	$^{13}C_6$-Fluoranthene.
4	202.078	M	$C_{16}H_{10}$	Pyrene.
4	205.078	M	$^{13}C_3{}^{12}C_{13}H_{10}$	$^{13}C_3$-Pyrene.
	213.9898	QC		FC43.
	218.9856	LOCK		FC43.
4	228.0936	M	$C_{18}H_{12}$	Benz[*a*]anthracene.
	230.9856	LOCK		PFK.
4	234.114	M	$^{13}C_6C_{12}H_{12}$	$^{13}C_6$-Benz[*a*]anthracene.
4	228.0936	M	$C_{18}H_{12}$	Chrysene.
4	234.114	M	$^{13}C_6{}^{12}C_{12}H_{12}$	$^{13}C_6$-Chrysene.
4	252.0936	M	$C_{20}H_{12}$	Benzo[*b*]fluoranthene.
4	258.114	M	$^{13}C_6{}^{12}C_{14}H_{12}$	$^{13}C_6$-Benzo[*b*]fluoranthene.
4	252.32	M	$C_{20}H_{12}$	Benzo[*k*]fluoranthene.
4	258.114	M	$^{13}C_6{}^{12}C_{14}H_{12}$	$^{13}C_6$-Benzo[*k*]fluoranthene.
5	252.0936	M	$C_{20}H_{12}$	Benzo[*e*]pyrene.
5	256.1072	M	$^{13}C_4\ ^{12}C_{16}H_{12}$	$^{13}C_4$-Benzo[*e*]pyrene.
5	256.1072	M	$^{13}C_4\ ^{12}C_{16}H_{12}$	$^{13}C_4$-Benzo[*a*]pyrene.
5	252.0936	M	$C_{20}H_{12}$	Benzo[*a*]pyrene.
5	252.0936	M	$C_{20}H_{12}$	Perylene.
5	264.1692	M	$C_{20}D_{12}$	d_{12}-Perylene.
	268.9824	QC		PFK.
	263.9871	LOCK		FC43.
6	276.0936	M	$C_{22}H_{12}$	Indeno[*1,2,3-cd*]pyrene.
6	282.114	M	$^{13}C_6\ ^{12}C_{16}H_{12}$	$^{13}C_6$-Indeno[*1,2,3,cd*]pyrene.
5	278.1092	M	$C_{22}H_{14}$	Dibenz[*a,h*]anthracene.
	280.9824	LOCK		PFK.
5	284.1296	M	$^{13}C_6\ ^{12}C_{16}H_{14}$	$^{13}C_6$-Dibenz[*a,h*]anthracene.
6	276.0936	M	$C_{22}H_{12}$	Benzo[*g,h,i*]perylene.
6	288.1344	M	$^{13}C_{12}\ ^{12}C_{10}H_{12}$	$^{13}C_{12}$-Benzo[*g,h,i*]perylene.
	313.9839	QC		FC43.

[a] Isotopic masses used for accurate mass calculation: ^1H = 1.0078, ^{12}C = 12.0000, ^{13}C = 13.0034, ^2H = 2.0141.
[b] LOCK = Lock-Mass Ion PFK or FC43. QC = Quality Control Check Ion.

TABLE 23–6—ELEMENTAL COMPOSITIONS AND EXACT MASSES OF THE IONS MONITORED BY HIGH-RESOLUTION MASS SPECTROMETRY FOR PCB

Chlorine substitution	Mass [a]	Ion type [b]	Elemental composition	Target analyte	Chlorine substitution	Mass [a]	Ion type [b]	Elemental composition	Target analyte
Fn-1; Cl-1	188.0393	M	$^{12}C_{12}H_9{}^{35}Cl$	Cl-1 PCB	Fn-5; Cl-5,6,7	323.8834	M	$^{12}C_{12}H_5{}^{35}Cl_5$	Cl-5 PCB.
	190.0363	M+2	$^{12}C_{12}H_9{}^{37}Cl$	Cl-1 PCB		325.8804	M+2	$^{12}C_{12}H_5{}^{35}Cl_4{}^{37}Cl$	Cl-5 PCB.
	200.0795	M	$^{13}C_{12}H_9{}^{35}Cl$	$^{13}C_{12}$ Cl-1 PCB		327.8775	M+4	$^{12}C_{12}H_5{}^{35}Cl_3{}^{37}Cl_2$	Cl-5 PCB.
	202.0766	M+2	$^{12}C_{12}H_9{}^{37}Cl$	$^{13}C_{12}$ Cl-1 PCB		337.9207	M+2	$^{13}C_{12}H_5{}^{35}Cl_4{}^{37}Cl$	$^{13}C_{12}$ Cl-5 PCB.
	218.9856	LOCK	C_4F_9	PFK		339.9178	M+4	$^{13}C_{12}H_5{}^{35}Cl_3{}^{37}Cl_2$	$^{13}C_{12}$ Cl-5 PCB.
Fn-2; Cl-2,3	222.0003	M	$^{12}C_{12}H_8{}^{35}Cl_2$	Cl-2 PCB		354.9792	LOCK	C_9F_{13}	PFK.
	223.9974	M+2	$^{12}C_{12}H_8{}^{35}Cl{}^{37}Cl$	Cl-2 PCB		359.8415	M+2	$^{12}C_{12}H_4{}^{35}Cl_5{}^{37}Cl$	Cl-6 PCB.
	225.9944	M+4	$^{12}C_{12}H_8{}^{37}Cl_2$	Cl-2 PCB		361.8385	M+4	$^{12}C_{12}H_4{}^{35}Cl_4{}^{37}Cl_2$	Cl-6 PCB.
	234.0406	M	$^{13}C_{12}H_8{}^{35}Cl_2$	$^{13}C_{12}$ Cl-2 PCB		363.8356	M+6	$^{12}C_{12}H_4{}^{35}Cl_3{}^{37}Cl_3$	Cl-6 PCB.
	236.0376	M+2	$^{13}C_{12}H_8{}^{35}Cl{}^{37}Cl$	$^{13}C_{12}$ Cl-2 PCB		371.8817	M+2	$^{13}C_{12}H_4{}^{35}Cl_5{}^{37}Cl$	$^{13}C_{12}$ Cl-6 PCB.
	242.9856	LOCK	C_4F_9	PFK		373.8788	M+4	$^{13}C_{12}H_4{}^{35}Cl_4{}^{37}Cl_2$	$^{13}C_{12}$ Cl-6 PCB.
	255.9613	M	$^{12}C_{12}H_7{}^{35}Cl_3$	Cl-3 PCB		393.8025	M+2	$^{12}C_{12}H_3{}^{35}Cl_6{}^{37}Cl$	Cl-7 PCB.

TABLE 23–6—ELEMENTAL COMPOSITIONS AND EXACT MASSES OF THE IONS MONITORED BY HIGH-RESOLUTION MASS SPECTROMETRY FOR PCB—Continued

Chlorine substitution	Mass [a]	Ion type [b]	Elemental composition	Target analyte	Chlorine substitution	Mass [a]	Ion type [b]	Elemental composition	Target analyte
	257.9584	M+2	$^{12}C_{12}H_7{}^{35}Cl_2{}^{37}Cl$	Cl-3 PCB		395.7995	M+4	$^{12}C_{12}H_3{}^{35}Cl_5{}^{37}Cl_2$	Cl-7 PCB.
	268.0016	M	$^{13}C_{12}H_7{}^{35}Cl_3$	$^{13}C_{12}$ Cl-3 PCB		397.7966	M+6	$^{12}C_{12}H_3{}^{35}Cl_4{}^{37}Cl_3$	$^{37}Cl_3$ Cl-7 PCB.
	269.9986	M+2	$^{13}C_{12}H_7{}^{35}Cl_2{}^{37}Cl$	$^{13}C_{12}$ Cl-3 PCB		405.8428	M+2	$^{13}C_{12}H_3{}^{35}Cl_6{}^{37}Cl$	$^{13}C_{12}$ Cl-7 PCB.
Fn-3; Cl-3,4,5	255.9613	M	$^{12}C_{12}H_7{}^{35}Cl_3$	Cl-3 PCB		407.8398	M+4	$^{13}C_{12}H_3{}^{35}Cl_5{}^{37}Cl_2$	$^{13}C_{12}$ Cl-7 PCB.
	257.9584	M+2	$^{12}C_{12}$ $H_7{}^{35}Cl_2{}^{37}Cl$	Cl-3 PCB		454.9728	QC	$C_{11}F_{17}$	PFK.
	259.9554	M+4	$^{12}C_{12}H_7{}^{35}Cl^{37}Cl_2$	Cl-3 PCB	Fn-6; Cl-7,8,9,10	393.8025	M+2	$^{12}C_{12}H_3{}^{35}Cl_6{}^{37}Cl$	Cl-7 PCB.
	268.0016	M	$^{13}C_{12}H_7{}^{35}Cl_3$	$^{13}C_{12}$ Cl-3 PCB		395.7995	M+4	$^{12}C_{12}H_3{}^{35}Cl_5{}^{37}Cl_2$	Cl-7 PCB.
	269.9986	M+2	$^{13}C_{12}H_7{}^{35}Cl_2{}^{37}Cl$	$^{13}C_{12}$ Cl-3 PCB		397.7966	M+6	$^{12}C_{12}H_3{}^{35}Cl_4{}^{37}Cl_3$	Cl-7 PCB.
	280.9825	LOCK	C_6F_{11}	PFK		405.8428	M+2	$^{13}C_{12}H_3{}^{35}Cl_6{}^{37}Cl$	$^{13}C_{12}$ Cl-7 PCB.
	289.9224	M	$^{12}C_{12}H_6{}^{35}Cl_4$	Cl-4 PCB		407.8398	M+4	$^{13}C_{12}H_3{}^{35}Cl_5{}^{37}Cl_2$	$^{13}C_{12}$ Cl-7 PCB.
	291.9194	M+2	$^{12}C_{12}H_6{}^{35}Cl_3{}^{37}Cl$	Cl-4 PCB		427.7635	M+2	$^{12}C_{12}H_2{}^{35}Cl_7{}^{37}Cl$	Cl-8 PCB.
	293.9165	M+4	$^{12}C_{12}H_6{}^{35}Cl_2{}^{37}Cl_2$	Cl-4 PCB		429.7606	M+4	$^{12}C_{12}H_2{}^{35}Cl_6{}^{37}Cl_2$	Cl-8 PCB.
	301.9626	M	$^{13}C_{12}H_6{}^{35}Cl_4$	$^{13}C_{12}$ Cl-4 PCB		431.7576	M+6	$^{12}C_{12}H_2{}^{35}Cl_5{}^{37}Cl_3$	Cl-8 PCB.
	303.9597	M+2	$^{13}C_{12}H_6{}^{35}Cl_3{}^{37}Cl$	$^{13}C_{12}$ Cl-4 PCB		439.8038	M+2	$^{13}C_{12}H_2{}^{35}Cl_7{}^{37}Cl$	$^{13}C_{12}$ Cl-8 PCB.
	323.8834	M	$^{12}C_{12}H_5{}^{35}Cl_5$	Cl-5 PCB		441.8008	M+4	$^{13}C_{12}H_2{}^{35}Cl_6{}^{37}Cl_2$	$^{13}C_{12}$ Cl-8 PCB.
	325.8804	M+2	$^{12}C_{12}H_5{}^{35}Cl_4{}^{37}Cl$	Cl-5 PCB		454.9728	QC	$C_{11}F_{17}$	PFK.
	327.8775	M+4	$^{12}C_{12}H_5{}^{35}Cl_3{}^{37}Cl_2$	Cl-5 PCB		427.7635	M+2	$^{12}C_{12}H_2{}^{35}Cl_7{}^{37}Cl$	Cl-8 PCB.
	337.9207	M+2	$^{13}C_{12}H_5{}^{35}Cl_4{}^{37}Cl$	$^{13}C_{12}$ Cl-5 PCB		429.7606	M+4	$^{12}C_{12}H_2{}^{35}Cl_6{}^{37}Cl_2$	Cl-8 PCB.
	339.9178	M+4	$^{13}C_{12}H_5{}^{35}Cl_3{}^{37}Cl_2$	$^{13}C_{12}$ Cl-5 PCB		431.7576	M+6	$^{12}C_{12}H_2{}^{35}Cl_5{}^{37}Cl_3$	Cl-8 PCB.
Fn-4; Cl-4,5,6	289.9224	M	$^{12}C_{12}H_6{}^{35}Cl_4$	Cl-4 PCB		439.8038	M+2	$^{13}C_{12}H_2{}^{35}Cl_7{}^{37}Cl$	$^{13}C_{12}$ Cl-8 PCB.
	291.9194	M+2	$^{12}C_{12}H_6{}^{35}Cl_3{}^{37}Cl$	Cl-4 PCB		441.8008	M+4	$^{13}C_{12}H_2{}^{35}Cl_6{}^{37}Cl_2$	$^{13}C_{12}$ Cl-8 PCB.
	293.9165	M+4	$^{12}C_{12}H_6{}^{35}Cl_2{}^{37}Cl_2$	Cl-4 PCB		442.9728	QC	$C_{10}F_{17}$	PFK.
	301.9626	M+2	$^{13}C_{12}H_6{}^{35}Cl_3{}^{37}Cl$	$^{13}C_{12}$ Cl-4 PCB		454.9728	LOCK	$C_{11}F_{17}$	PFK.
	303.9597	M+4	$^{13}C_{12}H_6{}^{35}Cl_2{}^{37}Cl_2$	$^{13}C_{12}$ Cl-4 PCB		461.7246	M+2	$^{12}C_{12}H_1{}^{35}Cl_8{}^{37}Cl$	Cl-9 PCB.
	323.8834	M	$^{12}C_{12}H_5{}^{35}Cl_5$	Cl-5 PCB		463.7216	M+4	$^{12}C_{12}H_1{}^{35}Cl_7{}^{37}Cl_2$	Cl-9 PCB.
	325.8804	M+2	$^{12}C_{12}H_5{}^{35}Cl_4{}^{37}Cl$	Cl-5 PCB		465.7187	M+6	$^{12}C_{12}H_1{}^{35}Cl_6{}^{37}Cl_3$	Cl-9 PCB.
	327.8775	M+4	$^{12}C_{12}H_5{}^{35}Cl_3{}^{37}Cl_2$	Cl-5 PCB		473.7648	M+2	$^{13}C_{12}H_1{}^{35}Cl_8{}^{37}Cl$	$^{13}C_{12}$ Cl-9 PCB.
	330.9792	LOCK	C_7F_{15}	PFK		475.7619	M+4	$^{13}C_{12}H_1{}^{35}Cl_7{}^{37}Cl_2$	$^{13}C_{12}$ Cl-9 PCB.
	337.9207	M+2	$^{13}C_{12}H_5{}^{35}Cl_4{}^{37}Cl$	$^{13}C_{12}$ Cl-5 PCB		495.6856	M+2	$^{13}C_{12}H_4$ $^{5}Cl_9{}^{37}Cl$	Cl-10 PCB.
	339.9178	M+4	$^{13}C_{12}H_5{}^{35}Cl_3{}^{37}Cl_2$	$^{13}C_{12}$Cl-5 PCB		499.6797	M+6	$^{12}C_{12}H_4{}^{35}Cl_8{}^{37}Cl_2$	Cl-10 PCB.
	359.8415	M+2	$^{13}C_{12}H_4{}^{35}Cl_5{}^{37}Cl$	Cl-6 PCB		501.6767	M+8	$^{12}C_{12}H_4{}^{35}Cl_7{}^{37}Cl_3$	Cl-10 PCB.
	361.8385	M+4	$^{13}C_{12}H_4{}^{35}Cl_4{}^{37}Cl_2$	Cl-6 PCB		507.7258	M+2	$^{13}C_{12}H_4{}^{35}Cl_9{}^{37}Cl$	$^{13}C_{12}$ Cl-10 PCB.
	363.8356	M+6	$^{12}C_{12}H_4{}^{35}Cl_3{}^{37}Cl_3$	Cl-6 PCB		509.7229	M+4	$^{13}C_{12}H_4{}^{35}Cl_8{}^{37}Cl_2$	$^{13}C_{12}$ Cl-10 PCB.
	371.8817	M+2	$^{13}C_{12}H_4{}^{35}Cl_5{}^{37}Cl$	$^{13}C_{12}$ Cl-6 PCB		511.7199	M+6	$^{13}C_{12}H_4{}^{35}Cl_7{}^{37}Cl_3$	$^{13}C_{12}$ Cl-10 PCB.
	373.8788	M+4	$^{13}C_{12}H_4{}^{35}Cl_4{}^{37}Cl_2$	$^{13}C_{12}$ Cl-6 PCB					

[a] Isotopic masses used for accurate mass calculation: ^{1}H = 1.0078, ^{12}C = 12.0000, ^{13}C = 13.0034, ^{35}Cl = 34.9689, ^{37}Cl = 36.9659, ^{19}F = 18.9984. An interference with PFK m/z 223.9872 may preclude meeting 10:1 S/N for the DiCB congeners at optional Cal 1 level (Table 23–11). If this interference occurs, 10:1 S/N must be met at the Cal 2 level.

[b] LOCK = Lock-Mass Ion PFK or FC43. QC = Quality Control Check Ion.

TABLE 23–7—CONCENTRATION OF THE SAMPLE FORTIFICATION FOR PCDD AND PCDF [a]

Compound	pg/μL in final extract [b]	Spike recovery
Pre-sampling Adsorbent Standard		
$^{13}C_{12}$-1,2,3,4-TeCDD	50	70–130%
$^{13}C_{12}$-1,2,3,4,7-PeCDD	50	70–130%
$^{13}C_{12}$-1,2,3,4,6-PeCDF	50	70–130%
$^{13}C_{12}$-1,2,3,4,6,9-HxCDF	50	70–130%
$^{13}C_{12}$-1,2,3,4,6,8,9-HpCDF	50	70–130%
Pre-extraction Filter Recovery Standard		
$^{13}C_{12}$-1,2,7,8-TeCDF	50	70–130%
$^{13}C_{12}$-1,2,3,4,6,8-HxCDD	50	70–130%
Pre-extraction Standard		
$^{13}C_{12}$-2,3,7,8-TeCDD	50	20–130%
$^{13}C_{12}$-2,3,7,8-TeCDF	50	20–130%
$^{13}C_{12}$-1,2,3,7,8-PeCDD	50	20–130%
$^{13}C_{12}$-1,2,3,7,8-PeCDF	50	20–130%
$^{13}C_{12}$-2,3,4,7,8-PeCDF	50	20–130%
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	50	20–130%
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	50	20–130%
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	50	20–130%
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	50	20–130%

TABLE 23–7—CONCENTRATION OF THE SAMPLE FORTIFICATION FOR PCDD AND PCDF [a]—Continued

Compound	pg/µL in final extract [b]	Spike recovery
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	50	20–130%
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	50	20–130%
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	50	20–130%
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	50	20–130%
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	50	20–130%
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	50	20–130%
$^{13}C_{12}$-OCDD	100	20–130%
$^{13}C_{12}$-OCDF	100	20–130%
Pre-analysis Standard		
$^{13}C_{12}$-1,3,6,8-TeCDD	50	S/N≥10
$^{13}C_{12}$-1,2,3,4-TeCDF	50	S/N≥10
$^{13}C_{12}$-1,2,3,4,6,7-HxCDD	50	S/N≥10
$^{13}C_{12}$-1,2,3,4,6,7,9-HpCDD	50	S/N≥10
Alternate Recovery Standard		
$^{13}C_{12}$-1,3,7,8-TeCDD	50	20–130%
$^{13}C_{12}$-1,2,4,7,8-PeCDD	50	20–130%

[a] Changes in the amounts of labeled standards added to the sample or its representative extract will necessitate an adjustment of the calibration solutions to prevent the introduction of inconsistencies. Spike concentration assumes 1 µL sample injection volume for analysis or the injection volume for calibration standards and samples is the same.

[b] Labeled standard concentrations are recommendations (equivalent mass per sample of 25 pg pre-extraction standard, as an example, based on a 200 µL extract volume split in half before cleanup with a 20 µL aliquot of a 500 pg/µL spiking solution). Recommendations are based on assumption that half of the extract will be archived before cleanup. Spike levels may be adjusted for different split levels.

Note: all standards used should be reported.

TABLE 23–8—CONCENTRATION OF THE SAMPLE FORTIFICATION FOR PAH [a]

Compound	pg/µL in final extract [b]	Spike recovery
Pre-sampling Adsorbent Standard		
$^{13}C_6$-Benzo[*c*]fluorene	100	70–130%
$^{13}C_{12}$-Benzo[*j*]fluoranthene	100	70–130%
Pre-extraction Filter Recovery Standard		
d_{10}-Anthracene	100	70–130%
Pre-extraction Standard		
$^{13}C_6$-Naphthalene	100	20–130%
$^{13}C_6$-2-Methylnaphthalene	100	20–130%
$^{13}C_6$-Acenaphthylene	100	20–130%
$^{13}C_6$-Acenaphthene	100	20–130%
$^{13}C_6$-Fluorene	100	20–130%
$^{13}C_6$-Phenanthrene	100	20–130%
$^{13}C_6$-Anthracene	100	20–130%
$^{13}C_6$-Fluoranthene	100	20–130%
$^{13}C_3$-Pyrene	100	20–130%
$^{13}C_6$-Benz[*a*]anthracene	100	20–130%
$^{13}C_6$-Chrysene	100	20–130%
$^{13}C_6$-Benzo[*b*]fluoranthene	100	20–130%
$^{13}C_6$-Benzo[*k*]fluoranthene	100	20–130%
$^{13}C_4$-Benzo[*e*]pyrene	100	20–130%
$^{13}C_4$-Benzo[*a*]pyrene	100	20–130%
d_{12}-Perylene	100	20–130%
$^{13}C_6$-Indeno[*1,2,3-cd*]pyrene	100	20–130%
$^{13}C_6$-Dibenz[*a,h*]anthracene	100	20–130%
$^{13}C_{12}$-Benzo[*g,h,i*]perylene	100	20–130%
Pre-analysis Standard		
d_{10}-Acenaphthene	100	S/N≥10
d_{10}-Pyrene	100	S/N≥10
d_{12}-Benzo[*e*]pyrene	100	S/N≥10

[a] Changes in the amounts of labeled standards added to the sample or its representative extract will necessitate an adjustment of the calibration solutions to prevent the introduction of inconsistencies.

[b] Labeled standard concentrations are recommendations (equivalent mass per sample of 25 pg pre-extraction standard, as an example, based on a 200 µL extract volume split in half before cleanup with a 20 µL aliquot of a 1000 pg/µL spiking solution). Recommendations are based on assumption that half of the extract will be archived before cleanup. Spike levels may be adjusted for different split levels.

Note: all standards used should be reported.

TABLE 23–9—CONCENTRATION OF THE SAMPLE FORTIFICATION FOR PCB [a]

Compound	BZ No.[b]	pg/µL in final extract [c]	Spike recovery
Pre-sampling Adsorbent Standard			
$^{13}C_{12}$-3,3′-DiCB	11L	100	70–130%
$^{13}C_{12}$-2,4′,5-TrCB	31L	100	70–130%
$^{13}C_{12}$-2,2′,3,5′,6-PeCB	95L	100	70–130%
$^{13}C_{12}$-2,2′,4,4′,5,5′-HxCB	153L	100	70–130%
Pre-extraction Filter Recovery Standard			
$^{13}C_{12}$-2,3,3′,4,5,5′-HxCB	159L	100	70–130%
Pre-extraction Standard			
$^{13}C_{12}$-2-MoCB (WDC)	1L	100	20–145%
$^{13}C_{12}$-4-MoCB (WDC)	3L	100	20–145%
$^{13}C_{12}$-2,2′-DiCB (WDC)	4L	100	20–145%
$^{13}C_{12}$-4,4′-DiCB (WDC)	15L	100	20–145%
$^{13}C_{12}$-2,2′,6-TrCB (WDC)	19L	100	20–145%
$^{13}C_{12}$-3,4′,4′-TrCB (WDC)	37L	100	20–145%
$^{13}C_{12}$-2,2′,6,6′-TeCB (WDC)	54L	100	20–145%
$^{13}C_{12}$-3,3′,4,4′-TeCB (WDC) (WHOT) (NOAAT)	77L	100	20–145%
$^{13}C_{12}$-3,4,4′,5-TeCB (WHOT)	81L	100	20–145%
$^{13}C_{12}$-2,2′,4,6,6′-PeCB (WDC)	104L	100	20–145%
$^{13}C_{12}$-2,3,3′,4,4′-PeCB (WHOT)	105L	100	20–145%
$^{13}C_{12}$-2,3,4,4′,5-PeCB (WHO)	114L	100	20–145%
$^{13}C_{12}$-2,3′,4,4′,5-PeCB (WHOT)	118L	100	20–145%
$^{13}C_{12}$-2′,3,4,4′,5-PeCB (WHOT)	123L	100	20–145%
$^{13}C_{12}$-3,3′,4,4′,5-PeCB (WDC) (WHOT)	126L	100	20–145%
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB (WDC)	155L	100	20–145%
$^{13}C_{12}$-2,3,3′,4,4′,5-HxCB (WHOT)	156L	100	20–145%
$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB (WHOT)	157L	100	20–145%
$^{13}C_{12}$-2,3′,4,4′,5,5′-HxCB (WHOT)	167L	100	20–145%
$^{13}C_{12}$-3,3′,4,4′,5,5′-HxCB (WDC) (WHOT) (NOAAT)	169L	100	20–145%
$^{13}C_{12}$-2,2′,3,3′,4,4′,5′-HpCB (NOAAT)	170L	100	20–145%
$^{13}C_{12}$-2,2′,3,4,4′,5,5′-HpCB (NOAAT)	180L	100	20–145%
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB (WDC)	188L	100	20–145%
$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB (WDC) (WHOT)	189L	100	20–145%
$^{13}C_{12}$-2,2′,3′,3′,5,5′,6,6′-OcCB (WDC)	202L	100	20–145%
$^{13}C_{12}$-2,3′,3′,4,4′,5,5′,6-OcCB (WDC)	205L	100	20–145%
$^{13}C_{12}$-2,2′,3,3′,4,4′,5,5′,6-NoCB (WDC)	206L	100	20–145%
$^{13}C_{12}$-2,2′,3,3′,4,5,5′,6,6′-NoCB (WDC)	208L	100	20–145%
$^{13}C_{12}$-DeCB (WDC)	209L	100	20–145%
Pre-analysis Standard			
$^{13}C_{12}$-2,5-DiCB	9L	100	S/N≥10
$^{13}C_{12}$-2,2′,5,5′-TeCB (NOAAT)	52L	100	S/N≥10
$^{13}C_{12}$-2,2′,4,5,5′-PeCB (NOAAT)	101L	100	S/N≥10
$^{13}C_{12}$-2,2′,3,4,4′,5′-HxCB (NOAAT)	138L	100	S/N≥10
$^{13}C_{12}$-2,2′,3,3′,4,4′,5,5′-OcCB	194L	100	S/N≥10
Optional Cleanup Standard			
$^{13}C_{12}$-2-MoCB (NOAAT)	28L	100	20–130%
$^{13}C_{12}$-2,2′,4,5,5′-PeCB	111L	100	20–130%
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB	178L	100	20–130%
Alternate Recovery Standard			
$^{13}C_{12}$-2,3′,4′,5-TeCB	70L	100	20–130%
$^{13}C_{12}$-2,3,4,4′-TeCB	60L	100	20–130%
$^{13}C_{12}$-3,3′,4,5,5′-PeCB	127L	100	20–130%

[a] Changes in the amounts of spike standards added to the sample or its representative extract will necessitate an adjustment of the calibration solutions to prevent the introduction of inconsistencies.

[b] BZ No.: Ballschmiter and Zell 1980, or IUPAC number.

[c] Labeled standard concentrations are recommendations (equivalent mass per sample of 25 pg pre-extraction standard, as an example, based on a 200 µL extract volume split in half before cleanup with a 20 µL aliquot of a 1000 pg/µL spiking solution). Recommendations are based on assumption that half of the extract will be archived before cleanup. Spike levels may be adjusted for different split levels.
NOAAT = PCB considered toxic by the National Oceanic and Atmospheric Administration.
WHOT = PCB considered toxic by the World Health Organization.
Note: all standards used should be reported.

TABLE 23–10—SAMPLE STORAGE CONDITIONS [a] AND LABORATORY HOLD TIMES [b]

Sample type	PCDD/PCDF	PAH	PCB
Field Storage and Shipping Conditions			
All Field Samples	≤20 °C, (68 °F)	≤20 °C, (68 °F)	≤20 °C, (68 °F).
Laboratory Storage Conditions			
Sampling Train Rinses and Filters	≤6 °C (43 °F)	≤6 °C (43 °F)	≤6 °C (43 °F).
Adsorbent	≤6 °C (43 °F)	≤6 °C (43 °F)	≤6 °C (43 °F).
Extract and Archive	<26 °C (79 °F) [c]	< −10 °C (14 °F)	< −10 °C (14 °F).
Laboratory Hold Times			
Extract and Archive	One year	45 Days	One year.

[a] Samples and extracts must be stored in the dark.
[b] Hold times begin from the time the laboratory receives the sample.
[c] Room temperature is acceptable if PCDD/PCDF are the only target compounds.
Note: Hold times for PCDD/PCDF and PCB are recommendations.

TABLE 23–11—CONCENTRATION OF THE INITIAL CALIBRATION STANDARD SOLUTIONS FOR PCDD AND PCDF [a]

[pg/µL]

Standard compound	Cal 1 (optional)	Cal 2	Cal 3	Cal 4	Cal 5	Cal 6	Cal 7 (optional)
Target (Unlabeled) Analytes	0.50	1.0	5.0	10.0	25	50	100
Pre-sampling Adsorbent Standard	50	50	50	50	50	50	50
Pre-extraction Filter Recovery Standard	50	50	50	50	50	50	50
Pre-extraction Standard ($^{13}C_{12}$-OCDD, $^{13}C_{12}$-OCDF − 100 pg/µL)	50	50	50	50	50	50	50
Pre-analysis Standard	50	50	50	50	50	50	50
Alternate Recovery Standard	50	50	50	50	50	50	50

[a] Assumes 1 µL injection volume or the injection volume for standards and samples is the same.

TABLE 23–12—CONCENTRATION OF THE INITIAL CALIBRATION STANDARD SOLUTIONS FOR PAH [a]

[pg/µL]

Standard compound	Cal 1 (optional)	Cal 2	Cal 3	Cal 4	Cal 5	Cal 6	Cal 7 (optional)
Target (Unlabeled) Analytes	1	2	4	20	80	400	1,000
Pre-sampling Adsorbent Standard	100	100	100	100	100	100	100
Pre-extraction Filter Recovery Standard	100	100	100	100	100	100	100
Pre-extraction Standard	100	100	100	100	100	100	100
Pre-analysis Standard	100	100	100	100	100	100	100

[a] Assumes 1 µL injection volume.

TABLE 23–13—CONCENTRATION OF THE INITIAL CALIBRATION STANDARD SOLUTIONS FOR PCB [a]

[pg/µL]

Standard compound	Cal 1 (optional)	Cal 2	Cal 3	Cal 4	Cal 5	Cal 6	Cal 7 (optional)
Target (Unlabeled) Analytes	0.50	1	5	10	50	400	2,000
Pre-sampling Adsorbent Standard	100	100	100	100	100	100	100
Pre-extraction Filter Recovery Standard	100	100	100	100	100	100	100
Pre-extraction Standard	100	100	100	100	100	100	100
Pre-analysis Standard	100	100	100	100	100	100	100
Alternate Standard	100	100	100	100	100	100	100

[a] Assumes 1 µL injection volume.

TABLE 23–14—MINIMUM REQUIREMENTS FOR INITIAL AND CONTINUING CALIBRATION RESPONSE FACTORS FOR ISOTOPICALLY LABELED AND NATIVE COMPOUNDS

Analyte group	Initial calibration RRF RSD	Continuing calibration RRF compared to ICAL RRF (PD)
Native (Unlabeled) Analytes	10	25
Pre-sampling Adsorbent Standard	20	25
Pre-extraction Filter Recovery Standard	20	25
Pre-extraction Standard	20	30
Alternative Recovery Standard	20	30

TABLE 23–15—RECOMMENDED ION TYPE AND ACCEPTABLE ION ABUNDANCE RATIOS

Number of chlorine atoms	Ion type	Theoretical ratio	Lower control limit	Upper control limit
1	M/M+2	3.13	2.66	3.60
2	M/M+2	1.56	1.33	1.79
3	M/M+2	1.04	0.88	1.20
4	M/M+2	0.77	0.65	0.89
5	M+2/M+4	1.55	1.32	1.78
6	M+2/M+4	1.24	1.05	1.43
6 [a]	M/M+2	0.51	0.43	0.59
7	M+2/M+4	1.05	0.89	1.21
7 [b]	M/M+2	0.44	0.37	0.51
8	M+2/M+4	0.89	0.76	1.02
9	M+2/M+4	0.77	0.65	0.89
10	M+4/M+6	1.16	0.99	1.33

[a] Used only for ^{13}C-HxCDF.
[b] Used only for ^{13}C-HpCDF.

TABLE 23–16—TYPICAL DB5–MS COLUMN CONDITIONS

Column parameter	PCDD/PCDF	PAH	PCB
Injector temperature	250 °C	320 °C	270 °C.
Initial oven temperature	100 °C	100 °C	100 °C.
Initial hold time (minutes)	2	2	2.
Temperature program	100 to 190 °C at 40 °C/min, then 190 to 300 °C at 3°C/min.	100 to 300 °C at 8°C/min	100 to 150 °C at 15 °C/min, then 150 to 290 °C at 2.5 °C/min.

TABLE 23–17—ASSIGNMENT OF PRE-EXTRACTION STANDARDS FOR QUANTITATION OF TARGET PCB [b]

PCB Congener	BZ No.[a]	Labeled analog	BZ No.
2,4′-DiCB (NOAAT)	8	$^{13}C_{12}$-2,2′-DiCB	4L
2,2′,5-TrCB (NOAAT)	18	$^{13}C_{12}$-2,2′,6-TrCB	19L
2,4,4′-TrCB (NOAAT)	28	$^{13}C_{12}$-2,2′,6-TrCB	19L
2,2′,3,5′-TeCB (NOAAT)	52	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L
2,2′,5,5′-TeCB (NOAAT)	52	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L
2,3′,4,4′-TeCB (NOAAT)	66	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L
3,3′,4,4′-TeCB (NOAAT) (WHOT)	77	$^{13}C_{12}$-3,3′,4,4′-TeCB	77L
3,4,4′,5-TeCB (WHOT)	81	$^{13}C_{12}$-3,4,4″,5-TeCB	81L
2,2′,4,5,5′-PeCB (NOAAT)	101	$^{13}C_{12}$-2,2′,4,5,5′-PeCB	104L
2,3,3′,4,4′-PeCB (NOAAT) (WHOT)	105	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L
2,3,4,4′,5-PeCB (WHOT)	114	$^{13}C_{12}$-2,3,4,4′,5-PeCB	114L
2,3′,4,4′,5-PeCB (WHOT)	118	$^{13}C_{12}$-2,3′,4,4′,5-PeCB	118L
2′,3,4,4′,5-PeCB (WHOT)	123	$^{13}C_{12}$-2′,3,4,4′,5-PeCB	123L
3,3′,4,4′,5-PeCB (NOAAT) (WHOT)	126	$^{13}C_{12}$-3,3′,4,4′,5-PeCB	126L
2,2′,3,3′,4,4′-HxCB (NOAAT)	128	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L
2,2′,3,4,4′,5′-HxCB (NOAAT)	138	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L
2,2′,4,4′,5,5′-HxCB (NOAAT)	153	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L
2,3,3′,4,4′,5-HxCB (WHOT)	156	$^{13}C_{12}$-2,3,3′,4,4′,5-HxCB	156L
2,3,3′,4,4′,5′-HxCB (WHOT)	157	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB	157L
2,3′,4,4′,5,5′-HxCB (WHOT)	167	$^{13}C_{12}$-2,3′,4,4′,5,5′-HxCB	167L
3,3′,4,4′,5,5′-HxCB (NOAAT) (WHOT)	169	$^{13}C_{12}$-3,3′,4,4′,5,5′-HxCB	169L
2,2′,3,3′,4,4′,5-HpCB (NOAAT)	170	$^{13}C_{12}$-2,2′,3,3′,4,4′,5′-HpCB	170L
2,2′,3,4,4′,5,5′-HpCB (NOAAT)	180	$^{13}C_{12}$-2,2′,3,4,4′,5,5′-HpCB	180L
2,2′,3,4′,5,5′,6-HpCB (NOAAT)	187	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB	188L
2,3,3′,4,4′,5,5′-HpCB (WHOT)	189	$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB	189L

TABLE 23–17—ASSIGNMENT OF PRE-EXTRACTION STANDARDS FOR QUANTITATION OF TARGET PCB[b]—Continued

PCB Congener	BZ No.[a]	Labeled analog	BZ No.
2,2′,3,3′,4,4′,5,6-OcCB (NOAAT)	195	$^{13}C_{12}$-2,2′ 3,3′,5,5′,6,6′-OcCB	202L
2,2′,3,3′,4,4′,5,5′,6-NoCB (NOAAT)	206	$^{13}C_{12}$-2,2′,3,3′,4,4′,5,5′,6-NoCB	206L
2,2′,3,3′,4,4′,5,5′,6,6′-DeCB (NOAAT)	209	$^{13}C_{12}$-DeCB	209L

[a] BZ No.: Ballschmiter and Zell 1980, or IUPAC number.
[b] Assignments assume the use of the SPB-Octyl column. In the event you choose another column, you may select the labeled standard having the same number of chlorine substituents and the closest retention time to the target analyte in question as the labeled standard to use for quantitation.
NOAAT = PCB considered toxic by the National Oceanic and Atmospheric Administration.
WHOT = PCB considered toxic by the World Health Organization.

TABLE 23–18—INITIAL DEMONSTRATION OF CAPABILITY QC REQUIREMENTS

Section	Requirement	Specification and frequency	Acceptance criteria
9.3.5	Demonstration of low system background	Analyze an LMB after the highest calibration standard. Note: If an automated extraction system is used, an LMB must be extracted on each port.	Confirm that the LMB is free from contamination as defined in Section 13.1.
9.3.7	Determination of MDL	Prepare, extract, and analyze 7 replicate spiked samples (spiked within 2 to 10 times of the expected MDL) and 7 LMBs. See 40 CFR Part 136 Appendix B	See MDL confirmation.
9.3.8	MDL confirmation	Prepare, extract, and analyze a spiked sample (spiked at the MDL).	Confirm that the target compounds meet the qualitative identification criteria in Section 11.4.3.4 of this method.
9.3.9	Demonstration of precision	Prepare, extract, and analyze 7 replicate spiked samples (spiked near mid-range).	Percent relative standard deviation must be ≤20%.
9.3.10	Demonstration of accuracy	Calculate mean recovery for replicate spiked samples in Section 9.3.9.	Mean recovery within 70–130% of true value.
9.3.2	Lowest Calibration Concentration Confirmation.	Establish a target concentration for the lowest calibration based on the intended use of the method.	Upper PIR ≤150%. Lower PIR ≥50%.
9.3.6	Calibration Verification	Analyze a mid-level QCS	Within limits in Section 13.11.

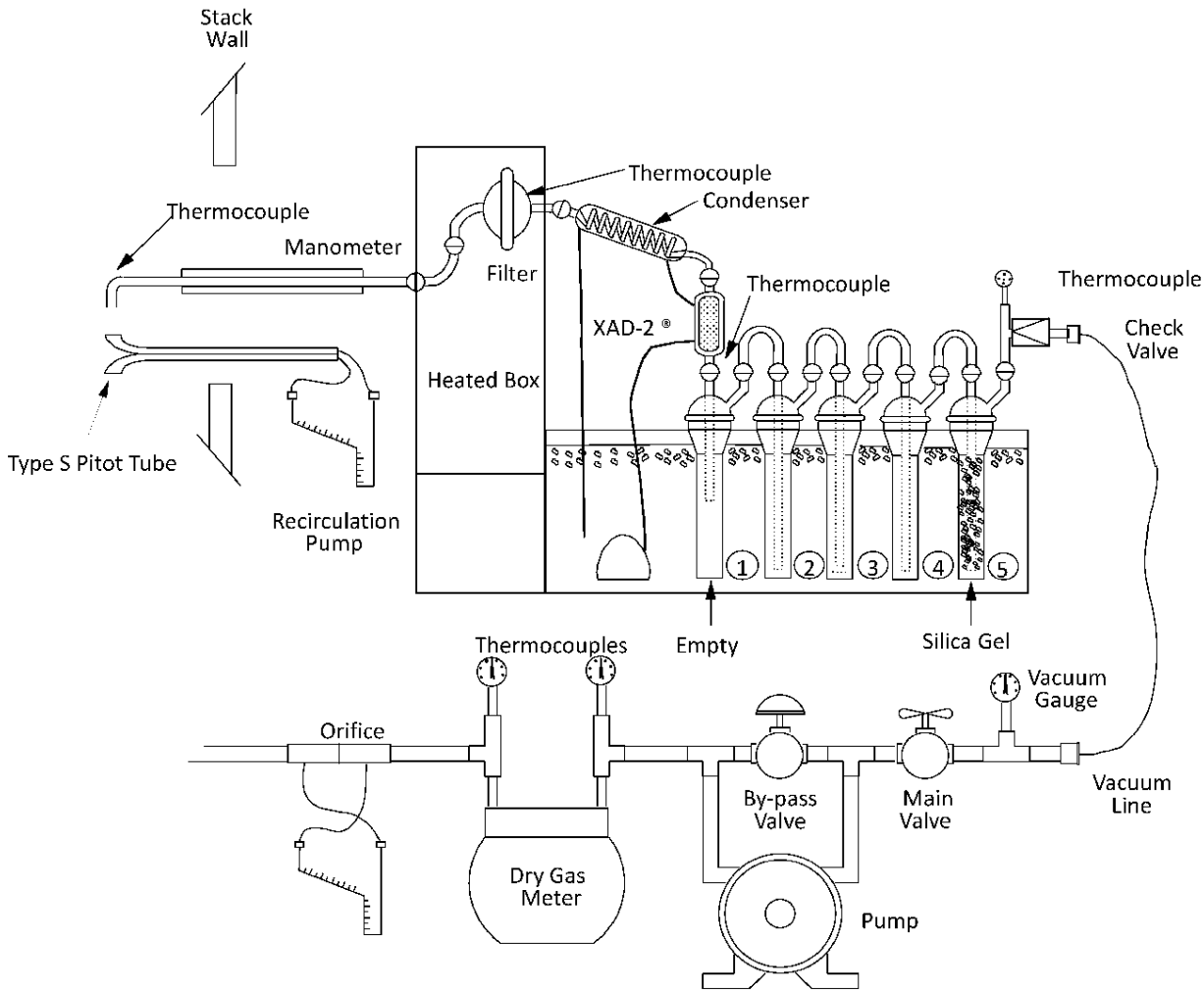


Figure 23–1. Method 23 Sampling Train

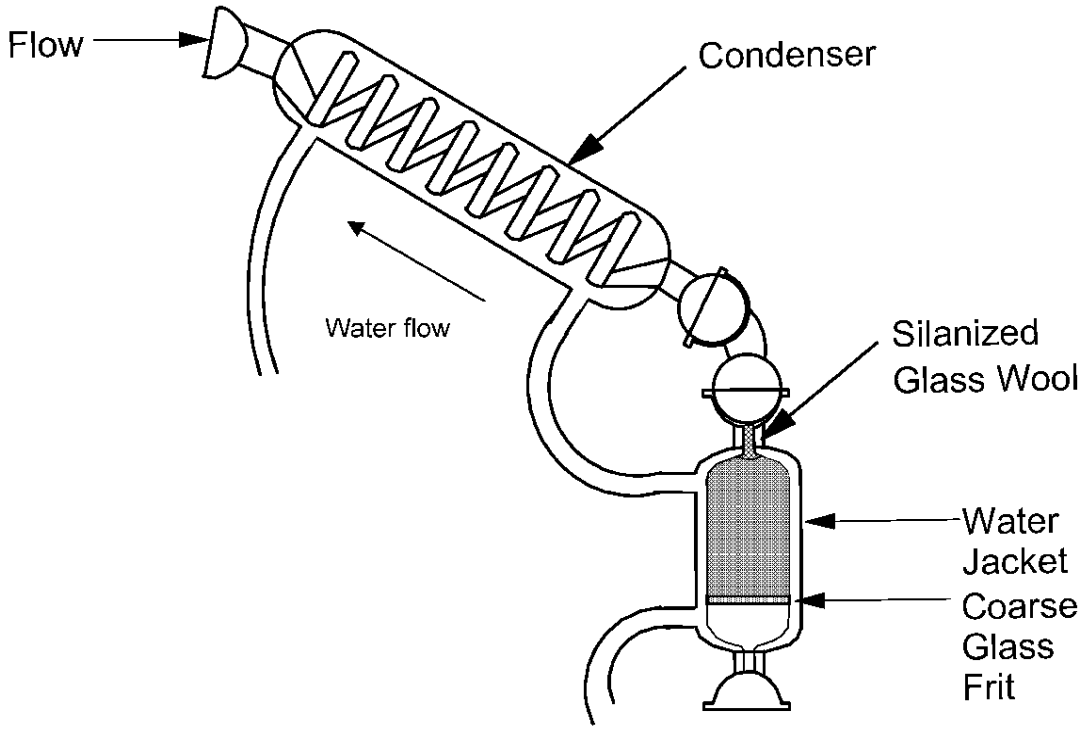


Figure 23–2. Condenser and Adsorbent Module

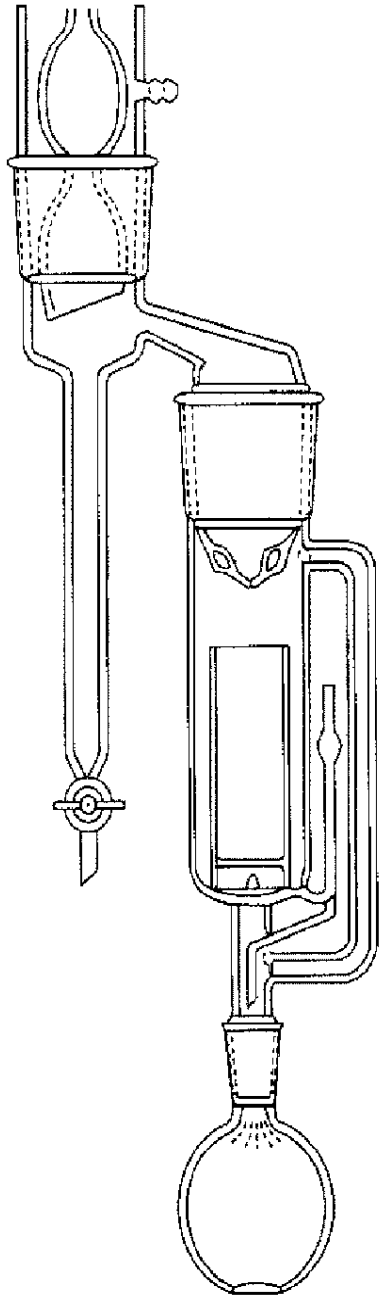


Figure 23–3. Soxhlet/Dean-Stark Extractor

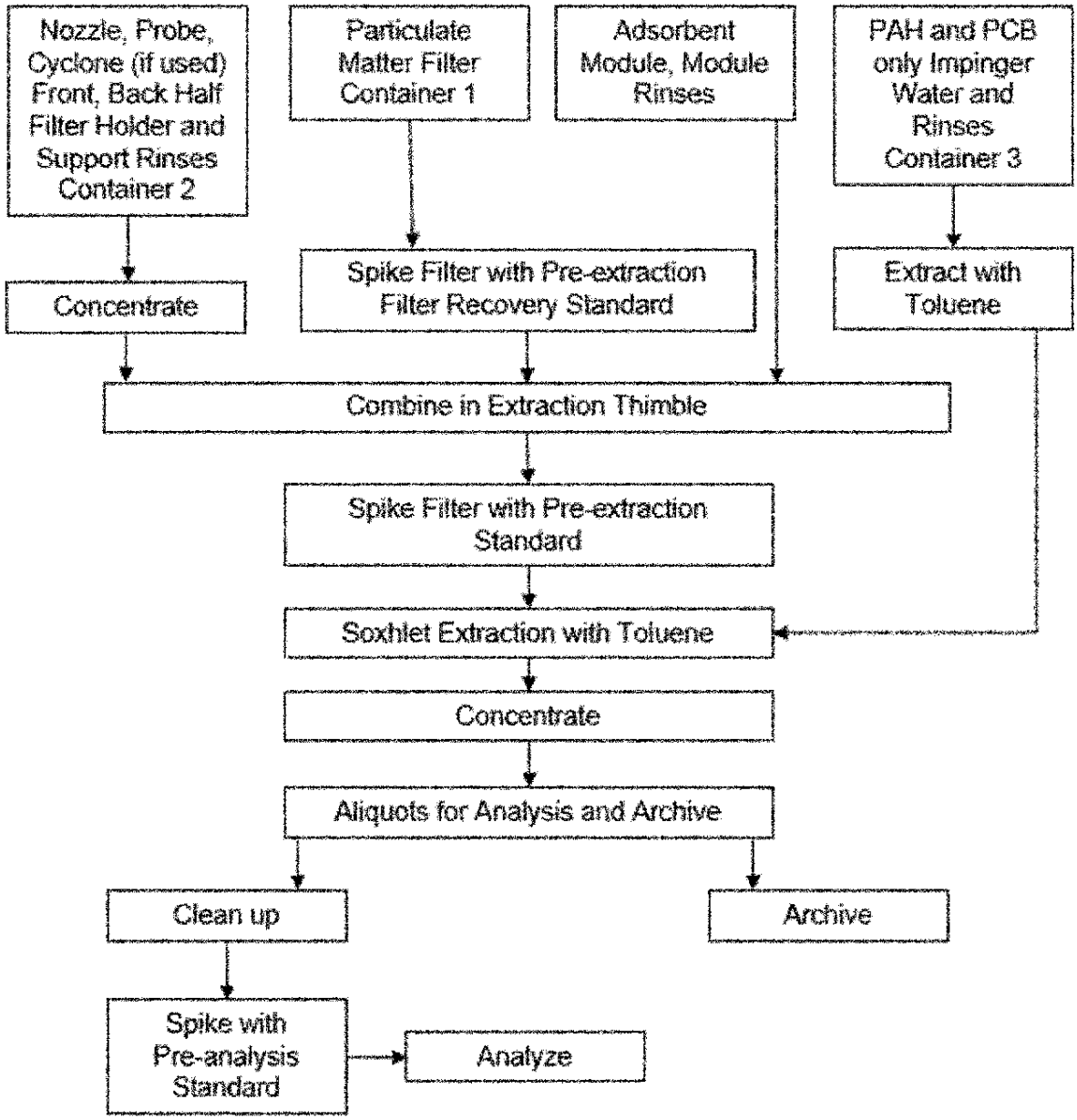


Figure 23–4. Sample Preparation Flow Chart

Appendix A to Method 23

COMPLETE LIST OF 209 PCB CONGENERS AND THEIR ISOMERS WITH CORRESPONDING ISOTOPE DILUTION QUANTITATION STANDARDS [a]

Pre-extraction standard	BZ [b] No.	Unlabeled target analyte	BZ [b] No.	Pre-extraction standard	BZ [b] No.	Unlabeled target analyte	BZ [b] No.
MoCB				**DiCB**			
$^{13}C_{12}$-2-MoCB	1L	2-MoCB	1	$^{13}C_{12}$-2,2′-DiCB	4L	2,2′-DiCB	4
$^{13}C_{12}$-2-MoCB	1L	3-MoCB	2	$^{13}C_{12}$-2,2′-DiCB	4L	2,3-DiCB	5
$^{13}C_{12}$-4-MoCB	3L	4-MoCB	3	$^{13}C_{12}$-2,2′-DiCB	4L	2,3′-DiCB	6
				$^{13}C_{12}$-2,2′-DiCB	4L	2,4-DiCB	7
				$^{13}C_{12}$-2,2′-DiCB	4L	2,4′-DiCB	8
				$^{13}C_{12}$-2,2′-DiCB	4L	2,5-DiCB	9
				$^{13}C_{12}$-2,2′-DiCB	4L	2,6-DiCB	10
				$^{13}C_{12}$-2,2′-DiCB	4L	3,3′-DiCB	11
				$^{13}C_{12}$-2,2′-DiCB	4L	3,4-DiCB	12
				$^{13}C_{12}$-2,2′-DiCB	4L	3,4′-DiCB	13
				$^{13}C_{12}$-2,2′-DiCB	4L	3,5-DiCB	14
				$^{13}C_{12}$-4,4′-DiCB	15L	4,4′-DiCB	15
TrCB							
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,2′,3-TrCB	16	$^{13}C_{12}$-3,4,4′-TrCB	19L	2,4,4′-TrCB	28
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,2′,4-TrCB	17	$^{13}C_{12}$-3,4,4′-TrCB	19L	2,4,5-TrCB	29
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,2′,5-TrCB	18	$^{13}C_{12}$-3,4,4′-TrCB	19L	2,4,6-TrCB	30
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,2′,6-TrCB	19	$^{13}C_{12}$-3,4,4′-TrCB	19L	2,4′,5-TrCB	31
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3,3′-TrCB	20	$^{13}C_{12}$-3,4,4′-TrCB	19L	2,4′,6-TrCB	32
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3,4-TrCB	21	$^{13}C_{12}$-3,4,4′-TrCB	19L	2′,3,4-TrCB	33
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3,4′-TrCB	22	$^{13}C_{12}$-3,4,4′-TrCB	19L	2′,3,5-TrCB	34
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3,5- TrCB	23	$^{13}C_{12}$-3,4,4′-TrCB	19L	3,3′,4-TrCB	35
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3,6- TrCB	23	$^{13}C_{12}$-3,4,4′-TrCB	19L	3,3′,5-TrCB	36
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3′,4-TrCB	25	$^{13}C_{12}$-3,4′,4′-TrCB	37L	3,4,4′-TrCB	37
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3′,5-TrCB	26	$^{13}C_{12}$-3,4′,4′-TrCB	37L	3,4,5-TrCB	38
$^{13}C_{12}$-2,2′,6-TrCB	19L	2,3′,6-TrCB	27	$^{13}C_{12}$-3,4′,4′-TrCB	37L	3,4′,5-TrCB	39
TeCB							
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,3′-TeCB	40	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,4,5-TeCB	61
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,4-TeCB	41	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,4,6-TeCB	62
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,4′-TeCB	42	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,4′,5-TeCB	63
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,5-TeCB	43	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,4′,6-TeCB	64
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,5′-TeCB	44	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,5,6-TeCB	65
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,6-TeCB	45	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,4,4′-TeCB	66
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,3,6′-TeCB	46	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,4,5-TeCB	67
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,4,4′-TeCB	47	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,4,5′-TeCB	68
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,4,5-TeCB	48	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,4,6-TeCB	69
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,4,5′-TeCB	49	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,4′,5-TeCB	70
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,4,6-TeCB	50	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,4′,6-TeCB	71
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,4,6′-TeCB	51	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,5,5′-TeCB	72
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,5,5′-TeCB	52	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3′,5′,6-TeCB	73
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,5,6′-TeCB	53	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,4,4′,5-TeCB	74
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,2′,6,6′-TeCB	54	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,4,4′,6-TeCB	75
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,3′,4′-TeCB	55	$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2′,3,4,5-TeCB	76
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,3′,4′-TeCB	56	$^{13}C_{12}$-3,3′,4,4′-TeCB	77L	3,3′,4,4′-TeCB	77
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,3′,5-TeCB	57	$^{13}C_{12}$-3,3′,4,4′-TeCB	77L	3,3′,4,5-TeCB	78
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,3′,5′-TeCB	58	$^{13}C_{12}$-3,3′,4,4′-TeCB	77L	3,3′,4,5′-TeCB	79
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,3′,6-TeCB	59	$^{13}C_{12}$-3,3′,4,4′-TeCB	77L	3,3′,5,5′-TeCB	80
$^{13}C_{12}$-2,2′,6,6′-TeCB	54L	2,3,4,4′-TeCB	60	$^{13}C_{12}$-3,4,4′,5-TeCB	81L	3,4,4′,5-TeCB	81
PeCB							
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,3′,4-PeCB	82	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,4,4′-PeCB	105
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,3′,5-PeCB	83	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,4,5-PeCB	106
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,3′,6-PeCB	84	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,4′,5-PeCB	107
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4,4′-PeCB	85	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,4,5′-PeCB	108
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4,5-PeCB	86	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,4,6-PeCB	109
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4,5′-PeCB	87	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,4′,6-PeCB	110
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4,6-PeCB	88	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,5,5′-PeCB	111
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4,6′-PeCB	89	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,5,6-PeCB	112
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4′,5-PeCB	90	$^{13}C_{12}$-2,3,3′,4,4′-PeCB	105L	2,3,3′,5′,6-PeCB	113
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,4′,6-PeCB	91	$^{13}C_{12}$-2,3,4,4′,5-PeCB	114L	2,3,4,4′,5-PeCB	114
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,5,5′-PeCB	92	$^{13}C_{12}$-2,3,4,4′,5-PeCB	114L	2,3,4,4′,6-PeCB	115
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,5,6-PeCB	93	$^{13}C_{12}$-2,3,4,4′,5-PeCB	114L	2,3,4,5,6-PeCB	116
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,5,6′-PeCB	94	$^{13}C_{12}$-2,3,4,4′,5-PeCB	114L	2,3,4′,5,6-PeCB	117
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,5′,6-PeCB	95	$^{13}C_{12}$-2,3′,4,4′,5-PeCB	118L	2,3′,4,4′,5-PeCB	118
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3,6,6′-PeCB	96	$^{13}C_{12}$-2,3′,4,4′,5-PeCB	118L	2,3′,4,4′,6-PeCB	119
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3′,4,5-PeCB	97	$^{13}C_{12}$-2,3′,4,4′,5-PeCB	118L	2,3′,4,5,5′-PeCB	120
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,3′,4,6-PeCB	98	$^{13}C_{12}$-2,3′,4,4′,5-PeCB	118L	2,3′,4,5,′6-PeCB	121
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,4,4′,5-PeCB	99	$^{13}C_{12}$-2,3′,4,4′,5-PeCB	118L	2′,3,3′,4,5-PeCB	122
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,4,4′,6-PeCB	100	$^{13}C_{12}$-2′,3,4,4′,5-PeCB	123L	2′,3,4,4′,5-PeCB	123
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,4,5,5′-PeCB	101	$^{13}C_{12}$-2′,3,4,4′,5-PeCB	123L	2′,3,4,5,5′-PeCB	124
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,4,5,6′-PeCB	102	$^{13}C_{12}$-2′,3,4,4′,5-PeCB	123L	2′,3,4,5,6′-PeCB	125
$^{13}C_{12}$-2,2′,4,6,6′-PeCB	104L	2,2′,4,5,′6-PeCB	103	$^{13}C_{12}$-3,3′,4,4′,5-PeCB	126L	3,3′,4,4′,5-PeCB	126

COMPLETE LIST OF 209 PCB CONGENERS AND THEIR ISOMERS WITH CORRESPONDING ISOTOPE DILUTION QUANTITATION STANDARDS [a]—Continued

Pre-extraction standard	BZ [b] No.	Unlabeled target analyte	BZ [b] No.	Pre-extraction standard	BZ [b] No.	Unlabeled target analyte	BZ [b] No.
$^{13}C_{12}$-2,2′,4,6,6′-PeCB ...	104L	2,2′,4,6,6′-PeCB	104	$^{13}C_{12}$-3,3′,4,4′,5-PeCB ..	126L	3,3′,4,5,5′-PeCB	127
HxCB							
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,4,4′-HxCB	128	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,3,4′,5′,6-HxCB	149
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,4,5-HxCB	129	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,3,4′,6,6′-HxCB	150
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,4,5′-HxCB	130	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,3,5,5′,6-HxCB	151
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,4,6-HxCB	131	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,3,5,6,6′-HxCB	152
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,4,6′-HxCB	132	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,4,4′,5,5′-HxCB	153
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,5,5′-HxCB	133	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,4,4′,5′,6-HxCB	154
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,5,6-HxCB	134	$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB.	155L	2,2′,4,4′,6,6′-HxCB	155
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,5,6′-HxCB	135	$^{13}C_{12}$-2,3,3′,4,4′,5-HxCB.	156L	2,3,3′,4,4′,5-HxCB	156
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,3′,6,6′-HxCB	136	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4,4′,5′-HxCB	157
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,4′,5-HxCB	137	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4,4′,6-HxCB	158
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,4′,5′-HxCB	138	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4,5,5′-HxCB	158
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,4′,6-HxCB	139	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4,5,6-HxCB	160
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,4′,6′-HxCB	140	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4,5′,6-HxCB	161
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,5,5′-HxCB	141	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4′,5,5′-HxCB	162
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,5,6-HxCB	142	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4′,5,6-HxCB	163
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,5,6′-HxCB	143	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,4′,5′,6-HxCB	164
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,5′,6-HxCB	144	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,3′,5,5′,6-HxCB	165
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4,6,6′-HxCB	145	$^{13}C_{12}$-2,3,3′,4,4′,5′-HxCB.	157L	2,3,4,4′,5,6-HxCB	166
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4′,5,5′-HxCB	146	$^{13}C_{12}$-2,3′,4,4′,5,5′-HxCB.	167L	2,3′,4,4′,5,5′-HxCB	167
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4′,5,6-HxCB	147	$^{13}C_{12}$-2,3′,4,4′,5,5′-HxCB.	167L	2,3′,4,4′,5′,6-HxCB	168
$^{13}C_{12}$-2,2′,4,4′,6,6′-HxCB	155L	2,2′,3,4′,5,6′-HxCB	148	$^{13}C_{12}$-3,3′,4,4′,5,5′-HxCB.	169L	3,3′,4,4′,5,5′-HxCB	169
HpCB							
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,4′,5-HpCB	170	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,4′,5,6′-HpCB	182
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,4′,6-HpCB	171	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,4′,5′,6-HpCB	183
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,5,5′-HpCB	172	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,4′,5′,6-HpCB	184
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,5,6-HpCB	173	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,4′,6,6′-HpCB	185
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,5,6′-HpCB	174	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,5,5′,6-HpCB	186
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,5′,6-HpCB	175	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4′,5,5′,6-HpCB	187
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4,6,6′-HpCB	176	$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4′,5,6,6′-HpCB	188
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,4′,5,6-HpCB	177	$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB.	189L	2,3,3′,4,4′,5,5′-HpCB	189
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,5,5′,6-HpCB	178	$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB.	189L	2,3,3′,4,4′,5,6-HpCB	190
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,3′,5,6,6′-HpCB	179	$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB.	189L	2,3,3′,4,4′,5′,6-HpCB	191
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,4′,5,5′-HpCB	180	$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB.	189L	2,3,3′,4,5,5′,6-HpCB	192
$^{13}C_{12}$-2,2′,3,4′,5,6,6′-HpCB.	188L	2,2′,3,4,4′,5,6-HpCB	181	$^{13}C_{12}$-2,3,3′,4,4′,5,5′-HpCB.	189L	2,3,3′,4′,5,5′,6-HpCB	193
OcCB				**NoCB**			
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,4′,5,5′-OcCB	194	$^{13}C_{12}$-2,2′,3,3′,4,4′,5,5′,6-NoCB.	206L	2,2′,3,3′,4,4′,5,5′,6-NoCB.	206

COMPLETE LIST OF 209 PCB CONGENERS AND THEIR ISOMERS WITH CORRESPONDING ISOTOPE DILUTION QUANTITATION STANDARDS [a]—Continued

Pre-extraction standard	BZ [b] No.	Unlabeled target analyte	BZ [b] No.	Pre-extraction standard	BZ [b] No.	Unlabeled target analyte	BZ [b] No.
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,4′,5,6-OcCB ..	195	$^{13}C_{12}$-2,2′,3,3′,4,4′,5,5′,6-NoCB.	206L	2,2′,3,3′,4,4′,5,6,6′-NoCB.	207
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,4′,5,6′-OcCB	196	$^{13}C_{12}$-2,2′,3,3′,4,5,5′,6,6′-NoCB.	208L	2,2′,3,3′,4,5,5′,6,6′-NoCB.	208
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,4′,6,6′-OcCB	197	**DeCB**			
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,5,5′,6-OcCB ..	198	$^{13}C_{12}$-DeCB	209L	2,2′,3,3′,4,4′,5,5′,6,6′-DeCB.	209
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,5,5′,6′-OcCB	199				
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,5,6,6′-OcCB ..	200				
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,4,5′,6,6′-OcCB	201				
$^{13}C_{12}$-2,2′,3,3′,5,5′,6,6′-OcCB.	202L	2,2′,3,3′,5,5′,6,6′-OcCB	202				
$^{13}C_{12}$-2,3′,3′,4,4′,5,5′,6-OcCB.	205L	2,2′,3,4,4′,5,5′,6-OcCB ..	203				
$^{13}C_{12}$-2,3′,3′,4,4′,5,5′,6-OcCB.	205L	2,2′,3,4,4′,5,6,6′-OcCB ..	204				
$^{13}C_{12}$-2,3′,3′,4,4′,5,5′,6-OcCB.	205L	2,3,3′,4,4′,5,5′,6-OcCB ..	205				

[a] Assignments assume the use of the SPB-Octyl column. In the event you choose another column, you may select the labeled standard having the same number of chlorine substituents and the closest retention time to the target analyte in question as the labeled standard to use for quantitation.
[b] BZ No.: Ballschmiter and Zell 1980, also referred to as IUPAC number.

Appendix B to Method 23

Preparation of XAD–2 Adsorbent Resin

1.0 Scope and Application

XAD–2® resin, as supplied by the original manufacturer, is impregnated with a bicarbonate solution to inhibit microbial growth during storage. Remove both the salt solution and any residual extractable chemicals used in the polymerization process before use. Prepare the resin by a series of water and organic extractions, followed by careful drying.

2.0 Extraction

2.1 You may perform the extraction using a Soxhlet extractor or other apparatus that generates resin meeting the requirements in Section 13.1 of Method 23. Use an all-glass thimble containing an extra-coarse frit for extraction of the resin. The frit is recessed 10–15 mm above a crenellated ring at the bottom of the thimble to facilitate drainage. Because the resin floats on methylene chloride, carefully retain the resin in the extractor cup with a glass wool plug and stainless-steel screen. This process involves sequential extraction with the following recommended solvents in the listed order.

- *Water initial rinse:* Place resin in a suitable container, soak for approximately 5 min with Type II water, remove fine floating resin particles and discard the water. Fill with Type II water a second time, let stand overnight, remove fine floating resin particles, and discard the water.
- *Hot water:* Extract with water for 8 hr.
- *Methyl alcohol:* Extract for 22 hr.
- *Methylene chloride:* Extract for 22 hr.
- *Toluene:* Extract for 22 hr.
- *Methylene chloride:* Extract for 22 hr.

Note: You may store the resin in a sealed glass container filled with toluene prior to the final toluene extraction. It may be necessary to repeat the final methylene chloride extractions to meet the cleanliness requirements in Section 13.1 of Method 23.

2.2 You may use alternative extraction procedures to clean large batches of resin. Any size extractor may be constructed; the choice depends on the needs of the sampling programs. The resin is held in a glass or stainless-steel cylinder between a pair of coarse and fine screens. Spacers placed under the bottom screen allow for even distribution of clean solvent. Clean solvent is circulated through the resin for extraction. A flow rate is maintained upward through the resin to allow maximum solvent contact and prevent channeling.

2.2.1 Experience has shown that 1 mL/g of resin extracted is the minimum necessary to extract and clean the resin. The aqueous rinse is critical to the subsequent organic rinses and may be accomplished by simply flushing the canister with about 1 liter of distilled water for every 25 g of resin. A small pump may be useful for pumping the water through the canister. You should perform the water extraction at the rate of about 20 to 40 mL/min.

2.2.2 All materials of construction are glass, PTFE, or stainless steel. Pumps, if used, should not contain extractable materials.

3.0 Drying

3.1 Dry the adsorbent of extraction solvent before use. This section provides a recommended procedure to dry adsorbent that is wet with solvent. However, you may use other procedures if the cleanliness requirements in Section 13.1 of Method 23 are met.

3.2 Drying Column. A simple column with suitable retainers will hold all the XAD–2 from the extractor or the Soxhlet extractor, as shown in Figure B–1, with sufficient space for drying the bed while generating a minimum backpressure in the column.

3.3 Drying Procedure: Dry the adsorbent using clean inert gas. Liquid nitrogen from a standard commercial liquid nitrogen cylinder has proven to be a reliable source of large volumes of gas free from organic contaminants. You may use high-purity tank nitrogen to dry the resin. However, you should pass the high-purity nitrogen through a bed of activated charcoal approximately 150 mL in volume prior to entering the drying apparatus.

3.3.1 Connect the gas vent of a liquid nitrogen cylinder or the exit of the activated carbon scrubber to the column by a length of precleaned copper tubing (*e.g.,* 0.95 cm ID) coiled to pass through a heat source. A convenient heat source is a water bath heated from a steam line. The final nitrogen temperature should only be warm to the touch and not over 40 °C.

3.3.2 Allow the methylene chloride to drain from the resin prior to placing the resin in the drying apparatus.

3.3.3 Flow nitrogen through the drying apparatus at a rate that does not fluidize or agitate the resin. Continue the nitrogen flow until the residual solvent is removed.

Note: Experience has shown that about 500 g of resin may be dried overnight by consuming a full 160–L cylinder of liquid nitrogen.

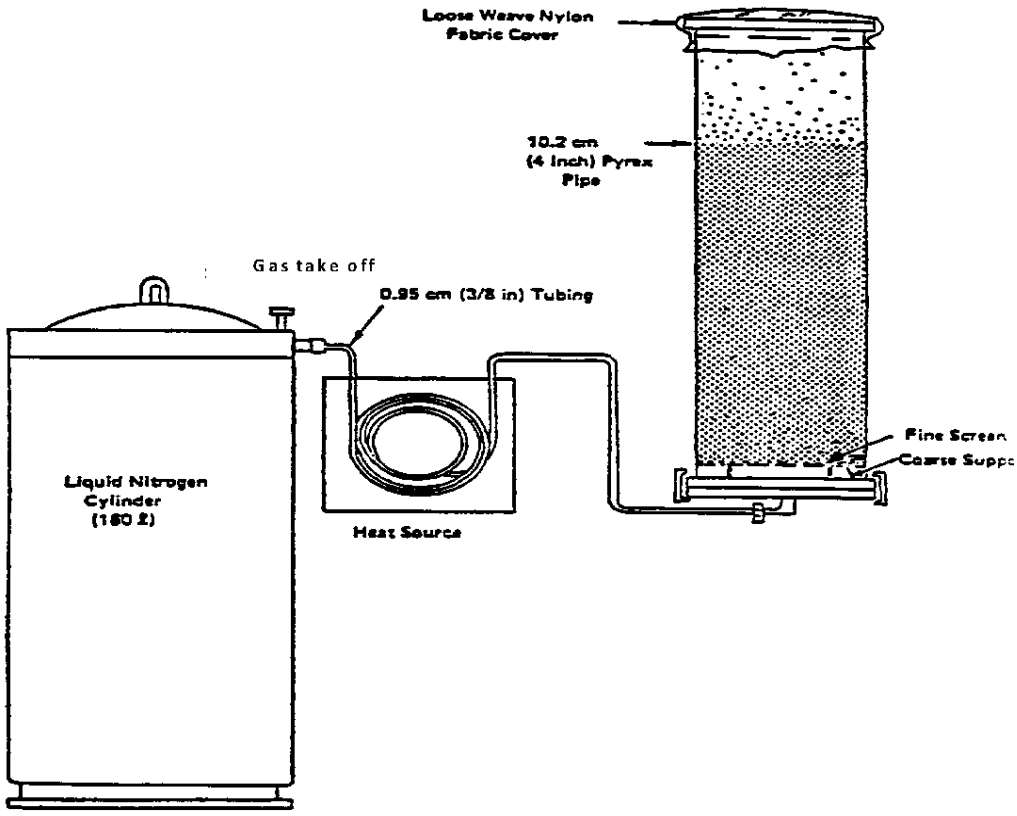


Figure B–1. XAD–2 fluidized-bed drying apparatus

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

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

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

Subpart LL—National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants

■ 7. In § 63.849, revise paragraphs (a)(13) and (14) to read as follows:

§ 63.849 Test methods and procedures.

* * * * *

(a) * * *

(13) Method 23 of Appendix A–7 of 40 CFR part 60 for the measurement of Polychlorinated Biphenyls (PCBs) where stack or duct emissions are sampled; and

(14) Method 23 of Appendix A–7 of 40 CFR part 60 and Method 14 or Method 14A in Appendix A to Part 60 of this chapter or an approved alternative method for the concentration of PCB where emissions are sampled from roof monitors not employing wet roof scrubbers.

* * * * *

Subpart EEE—National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors

■ 8. In § 63.1208, revise paragraph (b)(1) to read as follows:

§ 63.1208 What are the test methods?

* * * * *

(b) * * *

(1) *Dioxins and furans.* (i) To determine compliance with the emission standard for dioxins and furans, you must use:

(A) Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans emissions from Stationary Sources, EPA Publication SW–846 (incorporated by reference—see § 63.14); or

(B) Method 23, provided in Appendix A, Part 60 of this chapter.

(ii) You must sample for a minimum of three hours, and you must collect a minimum sample volume of 2.5 dscm.

(iii) You may assume that nondetects are present at zero concentration.

* * * * *

Subpart XXX—National Emission Standards for Hazardous Air Pollutants for Ferroalloys Production: Ferromanganese and Silicomanganese

■ 9. In § 63.1625, revise paragraph (b)(10) to read as follows:

§ 63.1625 What are the performance test and compliance requirements for new, reconstructed, and existing facilities?

* * * * *

(b) * * *

(10) Method 23 of Appendix A–7 of 40 CFR part 60 to determine PAH.

* * * * *

Subpart AAAAAAA—National Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing

■ 10. In table 3 to Subpart AAAAAAA of Part 63 revise the entry "6. Measuring the PAH emissions" to read as follows:

TABLE 3 TO SUBPART AAAAAAA OF PART 63—TEST METHODS

For * * *	You must use * * *
* * * * *	
6. Measuring the PAH emissions.	EPA test method 23.
* * * * *	

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

■ 11. The authority citation for part 266 continues to read as follows:

Authority: 42 U.S.C. 1006, 2002(a), 3001–3009, 3014, 3017, 6905, 6906, 6912, 6921, 6922, 6924–6927, 6934, and 6937.

Subpart H—Hazardous Waste Burned in Boilers and Industrial Furnaces

■ 12. In § 266.104, revise paragraph (e)(1) to read as follows:

§ 266.104 Standards to control organic emissions.

* * * * *

(e) * * *

(1) During the trial burn (for new facilities or an interim status facility applying for a permit) or compliance test (for interim status facilities), determine emission rates of the tetra-octa congeners of chlorinated dibenzo-p-dioxins and dibenzofurans (CDDs/CDFs) using Method 0023A, Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources, EPA Publication SW–846, as incorporated by reference in § 260.11 of this chapter or Method 23, provided in Appendix A–7, Part 60 of this chapter.

* * * * *

[FR Doc. 2023–04958 Filed 3–17–23; 8:45 am]

BILLING CODE 6560–50–P

reimbursement no later than 1 year after February 22, 2023.

* * * * *

■ 4. Amend § 17.1005 by revising paragraph (a)(5) to read as follows:

§ 17.1005 Payment limitations.

(a) * * *

(5) VA will not reimburse a veteran under this section for any copayment, deductible, or similar payment that the veteran owes the third party or is obligated to pay under a health-plan contract.

* * * * *

[FR Doc. 2023–03339 Filed 2–21–23; 8:45 am]

BILLING CODE 8320–01–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2018–0747; FRL–6934.1–02–OAR]

RIN 2060–AV38

National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is taking final action on the technology review conducted on the Miscellaneous Coating Manufacturing (MCM) source category regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP). These final amendments include provisions for inorganic hazardous air pollutant (HAP) standards for process vessels.

DATES: This final rule is effective February 22, 2023.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2018–0747. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy. With the exception of such material, publicly available docket materials are available electronically in *https://www.regulations.gov/* or in hard copy at the EPA Docket Center, Room 3334, WJC West Building, 1301 Constitution Avenue NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Ms. Angie Carey, Sector Policies and Programs Division (E143–01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2187; fax number: (919) 541–0516; and email address: *carey.angela@epa.gov.*

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. Throughout this document the use of ''we,'' ''us,'' or ''our'' is intended to refer to the EPA. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

1–BP 1-bromopropane
CAA Clean Air Act
CFR Code of Federal Regulations
EJ Environmental Justice
EPA Environmental Protection Agency
FR Federal Register
gr/dscf grains per dry standard cubic feet
HAP hazardous air pollutant(s)
ICR Information Collection Request
km kilometer
MACT maximum achievable control technology
MCM miscellaneous coating manufacturing
NESHAP national emission standards for hazardous air pollutants
NTTAA National Technology Transfer and Advancement Act
OMB Office of Management and Budget
PRD pressure release devices
PM particulate matter
PRA Paperwork Reduction Act
RFA Regulatory Flexibility Act
RTR residual risk and technology review
µg/m3 microgram per cubic meter
UMRA Unfunded Mandates Reform Act
VCS voluntary consensus standards

Organization of this document. The information in this preamble is organized as follows:

I. General Information

A. Does this action apply to me?

B. Where can I get a copy of this document and other related information?

II. Background

A. What is the statutory authority for this action?

B. What is this source category and how does the current NESHAP regulate its organic and inorganic HAP emissions?

C. What changes did we propose for the MCM source category in our June 7, 2022, proposal?

III. What is the rationale for our final decisions and amendments for the NESHAP for the MCM source category?

A. Inorganic HAP Standards for Process Vessels

B. Adding 1–BP to the list of HAP

C. What are the effective and compliance dates of the standards?

IV. Summary of Cost, Enviornmental, and Economic Impacts and Additional Analyses Conducted

A. What are the affected sources?

B. What are the air quality impacts?

C. What are the cost impacts?

D. What are the economic impacts?

E. What analysis of enviornmental justice did we conduct?

V. Statutory and Executive Order Review

A. Executive Order 12866: Regulatory Planning and 13563 Improving Regulation and Regulatory Review

B. Paperwork Reduction Act (PRA)

C. Regulatory Flexibility Act (RFA)

D. Unfunded Mandates Reform Act of 1995 (UMRA)

E. Executive Order 13132: Federalism

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

G. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

H. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

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

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

K. Congressional Review Act (CRA)

I. General Information

A. Does this action apply to me?

Table 1 of this preamble lists the NESHAP and associated regulated industrial source categories that are the subject of this final rule. Table 1 is not intended to be exhaustive, but rather provides a guide for readers regarding the entities that this final rule is likely to affect. These final standards, once promulgated, will be directly applicable to the affected sources. Federal, state, local, and tribal government entities would not be affected by this final rule. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576; July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (see EPA–450/3–91–030; July 1992), the Manufacture of Paints, Coatings, and Adhesives source category ''is any facility engaged in their manufacture without regard to the

particular end-uses or consumers of such products. The manufacturing of these products may occur in any combination at any facility.'' This source category has since been renamed Miscellaneous Coating Manufacturing (MCM).

TABLE 1—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

Source category and NESHAP	NAICS code [1]
Miscellaneous Coating Manufacturing Industry	3255, 3259

[1] North American Industry Classification System.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at *https://www.epa.gov/stationary-sources-air-pollution/miscellaneous-coating-manufacturing-national-emission-standards.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the final rule and key technical documents at this same website.

II. Background

A. What is the statutory authority for this action?

This final rule amends the National Emission Standards for Hazardous Air Pollutants (NESHAP): Miscellaneous Coating Manufacturing, which was previously amended when the EPA finalized the Residual Risk and Technology Review (RTR) on August 14, 2020.[1]

In the *Louisiana Environmental Action Network* v. *EPA (LEAN)* decision issued on April 21, 2020, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) held that the EPA has an obligation to address unregulated emissions from a source category when the Agency conducts the 8-year technology review required by Clean Air Act (CAA) section 112(d)(6).[2] To meet this obligation, the EPA issued a proposed rule to address unregulated emissions of HAP from the MCM source category. Inorganic HAP can be emitted from sources in the MCM category as part of a source's particulate matter (PM) emissions. These emissions can occur when raw materials in powder form are added to paint mixing vessels. Therefore, amendments were proposed to define the maximum achievable control technology (MACT) standard for inorganic HAP within the MCM source category pursuant to CAA sections 112(d)(2) and (3).

B. What is this source category and how does the current NESHAP regulate its organic and inorganic HAP emissions?

As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* [3] and *Documentation for Developing the Initial Source Category List* (Final Report), [4] the ''manufacture of paints, coatings, and adhesives'' source category ''is any facility engaged in their manufacture without regard to the end-uses or consumers of such products. The manufacturing of these products may occur in any combination at any facility.''

The MCM source category includes the collection of equipment that is used to manufacture coatings at a facility. MCM operations also include cleaning operations. Coatings are materials such as paints, inks, or adhesives that are intended to be applied to a substrate and consist of a mixture of resins, pigments, solvents, and/or other additives, where the material is produced by a manufacturing operation where materials are blended, mixed, diluted, or otherwise formulated. Coatings do not include materials made in processes where a formulation component is synthesized by a chemical reaction or separation activity and then transferred to another vessel where it is formulated to produce a material used as a coating, where the synthesized or separated component is not stored prior to formulation.

The equipment regulated by the MCM NESHAP includes process vessels, storage tanks for feedstocks and products, equipment leak components (pumps, compressors, agitators, pressure relief devices (PRDs), sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems), wastewater tanks, heat exchangers, and transfer racks.

The current NESHAP regulates process vessels based on the volume of the process vessel and the maximum true vapor pressure of the organic HAP processed or stored. Control requirements range from the use of tightly fitted lids on process vessels to the capture and reduction of organic HAP emissions through the use of add-on controls (*i.e.,* a flare, oxidizer, or condenser).

The NESHAP did not previously regulate inorganic HAP from process vessels. During the addition of raw materials in powder form to paint mixing vessels, emissions of inorganic HAP in the form of PM emissions may occur and are typically collected and routed to a PM control device (*i.e.,* baghouse, fabric filters, cartridge filters, or scrubbers). This final rule addresses the previously unaddressed inorganic HAP emissions from this category and requires MACT for emission sources of inorganic HAP.

C. What changes did we propose for the MCM source category in our June 7, 2022, proposal?

On June 7, 2022, the EPA published a proposal in the **Federal Register** for the MCM NESHAP, 40 CFR part 63, subpart HHHHH, to set a MACT standard for inorganic HAP metal emissions from process vessels in the MCM source category. We also proposed to add 1-bromopropane (1–BP) to table 7, *Partially Soluble HAP,* and table 11, *List of Hazardous Air Pollutants That Must Be Counted Toward Total Organic HAP Content If Present at 0.1 Percent or More by Mass,* to this subpart. We asked for comment on these changes, and additionally sought comment on the use of 1–BP in this source category.

III. What is the rationale for our final decisions and amendments for the NESHAP for the MCM source category?

This section provides a description of what we proposed and what we are finalizing for the issue, the EPA's rationale for the final decisions and amendments, and a summary of key comments and responses.

[1] 85 FR 49724; Aug. 14, 2020.

[2] *Louisiana Environmental Action Network* v. *EPA,* 955 F.3d 1088 (D.C. Cir. 2020) *(''LEAN'').*

[3] See 57 FR 31576; July 16, 1992.

[4] See EPA–450/3–91–030, July 1992, available at *https://nepis.epa.gov/Exe/ZyNET.exe/2000MTDN.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1991+Thru+1994&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C91thru94%5CTxt%5C00000015%5C2000MTDN.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL.*

A. Inorganic HAP Standards for Process Vessels

1. What comments did we receive on the inorganic HAP standards, and what are our responses?

Comment: We received comments that the EPA should include design evaluations of PM control devices (*i.e.,* baghouses, fabric filters, cartridge filters, or scrubbers) as alternatives to EPA Method 5 testing for initial compliance demonstrations. The commenters argued that coatings production often occurs infrequently, taking a fraction of the time needed to conduct an EPA Method 5 test. The commenters argued that EPA Method 5 test runs usually require an hour or more, whereas the addition of dry solids to an MCM subject process vessel usually takes no more than 10 or 15 minutes for each batch. The commenters stated that it could be a matter of days, or months, before another batch of dry solids is added to a process vessel. Further, commenters argued that typically only 1 or 2 batches in a year would be subject to these standards for several reasons, including that the amendments only apply to process vessels that are greater than or equal to 250 gallons, and that some of the manufactured materials might not be coatings. The commenters also stated that besides metal HAP, facilities might already route any PM to a control device resulting from the addition of dry solids (*i.e.,* for worker hygiene protection).

Response: Periodic performance tests verify control device performance and also help identify potential degradation of an add-on control device over time to ensure the control device remains effective, reducing the potential for acute emissions episodes or noncompliance. Therefore, we are finalizing the requirement to conduct performance testing. The commenters indicate that the most significant issue is related to the amount of time that the controls are operating to limit PM emissions. We recognize that there may be instances where inorganic HAP materials are processed for very limited periods of time and, therefore, are clarifying that the performance test may be conducted during any solids addition or processing steps, and not just during the addition of inorganic HAP-containing materials. We note that the PM emissions limit proposed for inorganic HAP was based on performance testing for similar units that had the potential for PM emissions, and not limited to periods where inorganic HAP-containing materials were added or processed. We are, therefore, clarifying the regulatory text at 40 CFR 63.8005(i)(1)(i) to specify that EPA Method 5 may be conducted during the addition of any dry materials.

Comment: Commenters argued that design evaluations are allowed in other NESHAP rules including 40 CFR part 63, subpart BBBBBBB, Chemical Preparations Industry; 40 CFR part 63, subpart VVVVVV, Chemical Manufacturing Area Sources; and 40 CFR part 63, subpart CCCCCCC, Paints and Allied Products Manufacturing, and therefore should be allowed in this standard. In addition, commenters argued that the current MCM rule references 40 CFR part 63, subpart SS, which they claimed allows design evaluations to control organic HAP.

Response: As discussed above, performance testing is important to verify initial and periodic control device performance. Although design evaluations have been allowed in some NESHAP such as the area source standards identified by the commenter, performance testing is required in a number of MACT standards to demonstrate compliance. In the August 14, 2020, final rule, we finalized requirements for facilities subject to subpart HHHHH to conduct control device performance testing no less frequently than once every 5 years when using emission capture systems and add-on controls to demonstrate compliance, see 85 FR 49724, 49729, and removed provisions in conflict with this change. However, we erroneously did not make a conforming change to 40 CFR 63.8005(d)(1) at that time to remove now obsolete language addressing the conduct of design evaluations. We are therefore making a correction to 40 CFR 63.8005(d)(1) to remove the remaining reference regarding design evaluations in this provision.

Comment: Commenters suggested that the EPA should clarify that 40 CFR part 63, subpart SS, does not apply to PM control devices by adding clarifying language to 40 CFR 63.8000(a)(2) and (c).

Response: Because the final inorganic HAP metal general requirements are specified in a separate section from the organic HAP requirements cited by this commenter, this commenter's suggested clarifications are unnecessary. The requirements in § 63.8000(a)(2) and (c) are not related to the metal HAP requirements for PM control devices. Therefore, we have not made the requested clarifications.

Comment: Commenters suggested that the EPA provide 3 years, rather than 1 year, to comply with the final rule amendments. Commenters argued that the EPA did not account for all facilities that will need to install new control devices for PM. Commenters stated that some facilities have process vessels that are already controlled with a PM control device, but have other process vessels at their facilities that are not currently controlled with a PM control device and would, therefore, need to install a new PM control device.

Response: The final rule provides 1 year to comply with the amendments. For most facilities, 1 year to conduct performance tests on existing inorganic HAP control devices is an adequate amount of time. The commenters were not specific in terms of how many facilities would have to install new control devices to meet this final rule, but we expect that number to be minimal to none. Therefore, we have not provided additional time. We note, however, that 40 CFR 63.6(i)(4)(ii) provides an opportunity to request an additional 2 years to comply if necessary for the installation of controls.

Comment: One commenter suggested that the EPA conduct further research on the toxicity of non-mercury metal HAP.

Response: This comment is outside of the scope of this rulemaking. Nonetheless, the EPA continues to research and collect information on pollutants such as non-mercury metal HAP.

Comment: One commenter suggested that the EPA clarify whether inorganic HAP metal includes compounds of metal HAP (*i.e.,* manganese, antimony, nickel, lead, cobalt, chromium, cadmium, or arsenic) or just these metals themselves. The commenter also suggested that the EPA clarify whether the metal HAP limit of 0.1 percent by weight refers to the content of one single metal HAP compound or the total content of the metal HAP compounds combined.

Response: The definition of material containing metal HAP includes compounds of the metals listed and the metals themselves. The 0.1 percent by weight refers to the total content of all the metal HAP compounds combined and the metals themselves, except for elemental lead.

Comment: One commenter stated that there is a lack of standards for pigments and other solids that are in paste or slurry form. The commenter also suggested that the word ''liquid'' can be removed from the phrase ''pigments and other solids that are in paste, slurry, or liquid form,'' as no PM emissions occur in liquids.

Response: We disagree that there need to be standards for pigments and other solids that are in paste or slurry form as PM emissions do not occur from processing liquids, pastes, or slurries.

2. What did we propose and what changes are being made to the inorganic HAP amendments in this final rule?

This final rule addresses the previously unregulated inorganic HAP metal emissions from this source category by setting MACT standards for emission sources of metal HAP by amending the compliance requirements in 40 CFR 63.7995(f); the general requirements specified in 40 CFR 63.8005(a)(1)(iii) and (i); the reporting requirements specified in 40 CFR 63.8075; the recordkeeping requirements in 40 CFR 63.8080(i) and (g); and the general provisions as specified in table 10 to this subpart, as proposed, to set PM standards stating that existing sources must demonstrate initial compliance with the PM emissions limit of 0.014 grains per dry standard cubic foot (gr/dscf) and new sources must demonstrate initial compliance with the PM emissions limit of 0.0079 gr/dscf. We are revising table 1 of 40 CFR part 63, subpart HHHHH, as proposed, to include the 0.014 gr/dscf emission limit that applies to process vessels. Facilities are required to continuously comply with the standards during all operations that emit metal HAP. These final amendments do not apply to pigments and other solids that are in paste, slurry, or liquid form.

We are finalizing, as proposed, the definitions in 40 CFR 63.8105 for Bag Leak Detection System (BLDS), fabric filter, and material containing metal HAP. We are also amending the regulatory text at 40 CFR 63.8005(i)(1)(i) to specify that EPA Method 5 may be conducted during the addition of any dry materials, not only when dry material containing metal HAP are added.

As finalized, continuous compliance with the emission limits will be demonstrated through control device parameter monitoring coupled with periodic emissions testing.

Under this final rule, a source owner is required to submit semi-annual compliance summary reports which document both compliance with the requirements of this rule and any deviations from compliance with any of those requirements.

B. Adding 1–BP to the List of HAP

1. What comments did we receive regarding the addition of 1–BP to our list of HAP, and what are our responses?

Comment: One commenter argued that the CAA requires the EPA to establish MACT standards for each uncontrolled HAP, including 1–BP. The commenter argued that the *LEAN* decision specifies that the EPA must set emissions standards for each HAP emitted by the source category. The commenter stated that the *LEAN* decision requires the Agency to set MACT standards for HAP that have not previously been regulated. The commenter further stated that the EPA did not calculate MACT standards or establish emissions limits for 1–BP. The commenter stated that the EPA has never previously calculated how much 1–BP the best performing sources emit and has not set emissions standards for 1–BP. The commenter stated that adding 1–BP to table 7, *Partially Soluble HAP,* and table 11, *List of Hazardous Air Pollutants That Must Be Counted Toward Total Organic HAP Content If Present at 0.1 Percent or More by Mass,* to this subpart does not satisfy the EPA's obligation to set MACT standards. The commenter argued that the EPA does not have enough information to set a MACT floor for 1–BP. The commenter also argued that a similar analysis should have been completed for 1–BP as it was done for PM. The commenter argued that the EPA did not conduct a surrogate analysis between 1–BP and other organic HAP.

Response: As explained in our 2022 proposal, the D.C. Circuit in *LEAN* held that EPA has an obligation to address unregulated emissions from a source category when conducting the 8-year technology review required by section 112(d)(6). At the time this rule was proposed, we considered it possible that sources in this source category may use 1–BP; however, we had no data to support a conclusion that there are emissions of 1–BP from this source category. Nonetheless, we proposed to address potential MACT requirements, and stated "for this source category, we do not believe that the inclusion of 1–BP as an organic HAP would have affected the representativeness of the MACT standard." We asked for comments and data regarding emissions of 1–BP. However, no one provided data or other evidence demonstrating that 1–BP is emitted from this source category. In addition to requesting comments, we surveyed several MCM facilities to verify our position that 1–BP is not used in this industry. No respondents to our survey use or emit 1–BP (see *Miscellaneous Coating Manufacturing Source Category (MCM) Bromopropane (1–BP) Postcard Phone Survey Memo* in the docket for this action).

In response to this comment, we have examined whether the addition of 1–BP to the HAP list impacts the source category. We proposed to include 1–BP in the tables that list the regulated HAP for this source category as a conservative, protective approach. However, our survey and our knowledge regarding likely sources of 1–BP emissions lead us to conclude that 1–BP is not used in this source category. Therefore, the obligation to address unregulated emissions set out in LEAN does not apply here, and we are not including 1–BP in the list of HAP regulated in this final rule. The EPA will continue to evaluate the best approach to address any new HAP additions for each source category as the applicable NESHAP is reviewed.

2. What did we propose and what changes are being made regarding the addition of 1–BP in this final rule?

On January 5, 2022, the EPA published in the **Federal Register** (87 FR 393) a final rule amending the list of HAP under the CAA to add 1–BP in response to public petitions previously granted by the EPA. This action became effective on February 4, 2022.

As discussed above, although we proposed to include 1–BP in the tables that list the regulated HAP for this source category, we determined that including 1–BP in the tables in this subpart is not the correct approach for this source category. Based on our brief phone survey and knowledge of the industry, we have determined that facilities are not using or emitting 1–BP in this source category. Therefore, we are not finalizing the addition of 1–BP to table 7, *Partially Soluble HAP,* and table 11, *List of Hazardous Air Pollutants That Must Be Counted Toward Total Organic HAP Content If Present at 0.1 Percent or More by Mass,* to this subpart to include 1–BP.

C. What are the effective and compliance dates of the standards?

The revisions to the MACT standards being promulgated in this action are effective on February 22, 2024.

All the provisions we are finalizing under CAA sections 112(d)(2) and (3) are subject to the compliance deadlines outlined under CAA section 112(i). For existing sources, CAA section 112(i)(3) provides there shall be compliance "as expeditiously as practicable, but in no event later than 3 years after the effective date of such standard . . ." subject to certain exemptions further detailed in the statute.[5] In determining what compliance period is as "expeditious as practicable," we examined the amount of time needed to plan and construct projects and change

[5] *Association of Battery Recyclers* v. *EPA,* 716 F.3d 667, 672 (D.C. Cir. 2013) ("Section 112(i)(3)'s 3-year maximum compliance period applies generally to any emission standard . . . promulgated under [section 112]" (brackets in original)).

operating procedures. As provided in CAA section 112(i), all new affected sources would comply with these provisions by the effective date of the final amendments to the MCM NESHAP or upon startup, whichever is later.

All affected facilities would have to continue to meet the current provisions of 40 CFR part 63, subpart HHHHH, until the applicable compliance date of the amended rule. This final action is not a ''major rule'' as defined by 5 U.S.C. 804(2), so the effective date of the final rule will be the promulgation date as specified in CAA section 112(d)(10).

For all affected sources that commence construction or reconstruction on or before June 7, 2022, we are finalizing, as proposed, that it is necessary to provide 1 year after the effective date of the final rule or upon startup, whichever is later, for owners and operators to comply with the PM provisions. For all affected sources that commenced construction or reconstruction after June 7, 2022, we are finalizing, as proposed, that owners and operators comply with the amended PM provisions by the effective date of the final rule or upon startup, whichever is later.

IV. Summary of Cost, Enviornmental, and Economic Impacts and Additional Analyses Conducted

A. What are the affected sources?

Currently, 42 major sources subject to the MCM NESHAP are operating in the United States. The affected source under the NESHAP is the facility-wide collection of equipment used to manufacture coatings and includes all process vessels; storage tanks for feedstocks and products; components such as pumps, compressors, agitators, PRDs, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems; wastewater tanks; transfer racks; and cleaning operations. A coating is defined as a material such as paint, ink, or adhesive that is intended to be applied to a substrate and consists of a mixture of resins, pigments, solvents, and/or other additives, where the material is produced by a manufacturing operation and materials are blended, mixed, diluted, or otherwise formulated.

B. What are the air quality impacts?

We project no emissions reductions of PM from the MCM source category because all facilities reporting PM emissions are already equipped with particulate controls. This action finalizes first-time standards for inorganic HAP that will limit emissions and require that controls are effective.

Indirect or secondary air emissions impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (*e.g.,* increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment. The final amendments would have no effect on the energy needs of the affected facilities and would, therefore, have no indirect or secondary air emissions impacts.

C. What are the cost impacts?

All existing MCM facilities are expected to be currently achieving the level of control required by these final standards. That is, we believe that all existing sources currently route vent streams from specified equipment through a PM control device such that PM emissions are reduced to at least 0.014 gr/dscf. Although this final rule contains requirements for new sources, we are not aware of any new sources being constructed now or planned in the next year and, consequently, we did not estimate any cost impacts for new sources. Therefore, there are no capital costs of this final rule. The estimated annualized cost of the final rule would be $205,000 per year. The annualized costs account for submitting the notifications and for control device performance testing, inspections, monitoring, recordkeeping, and reporting for 12 facilities that are expected to have add-on controls. As stated in the technical support document, *Update of Summary of Data Collected for the MCM RTR Amendments,* there are 12 facilities that reported metal HAP to the 2017 NEI. Therefore, we expect only 12 facilities to incur costs. This document is available in the docket for this action. No other capital costs are associated with this final rule, and no additional operational and maintenance costs are expected.

D. What are the economic impacts?

For the final rule, the EPA estimated the cost of performing an initial performance test and annual control device inspections at affected facilities. To assess the potential economic impacts, the expected annual cost is compared to the total sales revenue for the ultimate owners of affected facilities. For this rule, the expected annual cost is $6,700 for each facility, with an estimated nationwide annual cost of $205,000 (2019$). The 42 affected facilities are owned by 27 parent companies, and the total costs associated with these amendments are expected to be less than 1 percent of annual sales revenue per ultimate owner. These costs account for 12 facilities expected to have add-on controls for metal HAP, as well as all 42 facilities to become familiar with the rule. These costs are not expected to result in a significant market impact, regardless of whether they are passed on to the purchaser or absorbed by the firms.

The EPA also prepared a small business screening assessment to determine whether any of the identified affected entities are small entities, as defined by the U.S. Small Business Administration. This analysis is available in the docket for this action (Docket ID No. EPA–HQ–OAR–2018–0747). Three of the affected facilities are owned by small entities. However, since the costs associated with these amendments for these 3 affected small entities are expected to be less than 1 percent of annual sales revenue per ultimate owner, there are no significant economic impacts on a substantial number of small entities from these final amendments.

Information on our cost impact estimates on the sources in the MCM source category is available in the docket for this final rule.

E. What analysis of environmental justice did we conduct?

Consistent with the EPA's commitment to integrating environmental justice (EJ) in the Agency's actions, and following the directives set forth in multiple Executive orders, the Agency has carefully determined the impacts of this action on communities with EJ concerns. For MCM facilities, the demographic proximity analysis shows the population for people of color is similar to or lower than the national average. However, the subcategory of the African American population is above the national average, as well as low-income and the population without a high-school diploma. This action will set emission standards for inorganic HAP metals. However, all existing sources currently operate control technologies and devices such that no further emission reductions are anticipated as a result of this action, including in communities already overburdened by pollution, which are often minority (*i.e.,* people of color and/or indigenous peoples) and low-income. Following is a more detailed description of how the Agency considers EJ in the context of regulatory

development, and specific actions taken to address EJ concerns for this action.

Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms, which are specifically minority populations (*i.e.,* people of color and/or indigenous people) and low-income populations (59 FR 7629; February 16, 1994). Additionally, Executive Order 13985 is intended to advance racial equity and support underserved communities through Federal Government actions (86 FR 7009; January 25, 2021). The EPA defines EJ as ''the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.'' The EPA further defines fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.'' In recognizing that minority and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to determine ways of protecting them from adverse public health and environmental effects of air pollution.

To examine the potential for any EJ issues that might be associated with MCM facilities, we performed a demographic analysis, which is an assessment of individual demographic groups of the populations living within 5 kilometers (km) and 50 km of the facilities. The EPA then compared the data from this analysis to the national average for each of the demographic groups.

A summary of the proximity demographic assessment performed for the major source MCM facilities is included as Table 2 of the proposal (see 87 FR 34622). The results of the demographic analysis indicate that, for populations within 5 km of the 42 major source MCM facilities, the percent of the population who are people of color (being the total population minus the white population) is similar to the national average (41 percent versus 40 percent). However, the percent African American population is higher than the national percent (20 percent versus 12 percent nationally). The percent of people living below the poverty level (19 percent) and those over 25 without a high school diploma (15 percent) are higher than the national averages (13 percent and 12 percent, respectively). The results of the analysis of populations within 50 km of the 42 major source MCM facilities indicate that, the percent population of people of color (being the total population minus the white population) is significantly lower than the national average (28 percent versus 40 percent). The percent of people living below the poverty level, those over 25 without a high school diploma, and people living in linguistic isolation are also lower than the corresponding national averages. The methodology and the results of the demographic analysis are presented in a technical report, *Analysis of Demographic Factors for Populations Living Near MCM Facilities,* available in this docket for this action (Docket ID No. EPA–HQ–OAR–2018–0747).

With regard to HAP emissions, this action requires facilities with process vessels emitting inorganic HAP, which consist of PM emissions from addition of raw materials in powder form to paint mixing vessels, to demonstrate compliance with PM emissions of 0.014 gr/dscf for existing sources and 0.0079 gr/dscf for new sources. Because all existing sources control these emissions, no further emission reductions are anticipated as a result of this action, including in communities already overburdened by pollution, which are often minority (*i.e.,* people of color and/or indigenous peoples) and low-income.

V. Statutory and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and 13563 Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

The information collection activities in this final rule will be submitted for approval to OMB under the PRA. The ICR document that the EPA prepared has been assigned EPA ICR number 2115.10. You can find a copy of the ICR in the MCM Docket (Docket ID No. EPA–HQ–OAR–2018–0747), and it is briefly summarized here.

Respondents/affected entities: Facilities manufacturing surface coatings.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart HHHHH).

Estimated number of respondents: In the year after the amendments are final, approximately 42 respondents per year would be subject to the NESHAP and no additional respondents are expected to become subject to the NESHAP during that period.

Frequency of response: The total number of responses in year 1 is 42, in year 2 is 12, and in year 3 is 12.

Total estimated burden: The average annual burden of the final amendments to the 42 MCM facilities over the first year if the amendments are finalized is estimated to be 1,593 hours (per year). The average annual burden to the Agency over the 3 years after the amendments are final is estimated to be 49 hours (per year). Burden is defined in 5 CFR 1320.3(b).

Total estimated cost: The average annual cost of the final amendments to the MCM facilities is $178,000 in labor costs in the first 3 years after the amendments are final. The average annual capital and operation and maintenance costs are $28,000. The total average annual Agency cost of the final amendments over the first 3 years after the amendments are final is estimated to be $2,330.

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 the EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the **Federal Register** and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are MCM facilities owned by small businesses. Three of the affected facilities are owned by small entities. However, since the costs associated with the amendments for these three affected small entities are expected to be less than one percent of annual sales revenue per ultimate owner, there are no significant economic impacts on a substantial number of small entities from these amendments. Details of this analysis are described in section IV.D. above and additional detail is provided

in the economic impact memorandums associated with this action.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. No tribal facilities are known to be engaged in any of the industries that would be affected by this action (MCM). Thus, Executive Order 13175 does not apply to this action. This action's health and risk assessments are contained in sections IV.E of this preamble.

Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, the EPA offered consultation to tribal officials during the development of this action. However, the Agency did not receive a request for consultation. The EPA also provided an overview on a tribal partnership call on June 30, 2022, during the public comment period to inform the tribes of the content of the proposed action and to encourage them to submit comments.

G. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

This action involves technical standards. Therefore, the EPA conducted searches for the MCM NESHAP through the Enhanced National Standards Systems Network (NSSN) Database managed by the American National Standards Institute (ANSI). We also reviewed voluntary consensus standards (VCS) organizations and accessed and searched their databases for EPA Methods 5 and 29. During the EPA's VCS search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures that are similar to the EPA's referenced method, the EPA ordered a copy of the standard and reviewed it as a potential equivalent method. We reviewed all potential standards to determine the practicality of the VCS for this rule. This review requires significant method validation data that meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering, and policy equivalence to procedures in the EPA referenced methods. The EPA may reconsider determinations of impracticality when additional information is available for a particular VCS.

No applicable VCS was identified for EPA Method 5. The search identified one VCS that was potentially applicable for this rule in lieu of EPA Method 29. However, after reviewing the available standard, the EPA determined that the VCS identified for measuring emissions of pollutants subject to emissions standards in the rule would not be practical due to lack of equivalency. Additional information for the VCS search and determination can be found in the memorandum *Voluntary Consensus Standard Results for National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coatings Manufacturing Technology Review,* which is available in the docket for this action.

H. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629; February 16, 1994) directs Federal agencies, to the greatest extent practicable and permitted by law, to make EJ part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations (people of color and/or indigenous peoples) and low-income populations.

The EPA anticipates that the human health or environmental conditions that exist prior to this action result in or have the potential to result in disproportionate effects on African American and low-income populations. Near MCM facilities, the percentages of residents who are African American or low income are higher than the nationwide percentages. However, based on prior analyses of this source category (85 FR 49727), risks from HAP pollutants have been found to be at acceptable levels and this rule will continue to maintain acceptable levels of exposure.

The EPA anticipates that this action will not change this characterization of impacts and is not likely to result in new disproportionate and adverse effects on people of color, low-income populations, and/or indigenous peoples. All existing sources currently operate control technologies and devices such that no further emission reductions are anticipated as a result of this action, including in communities already overburdened by pollution, which are often minority (*i.e.,* people of color and/or indigenous peoples) and low-income. The methodology and the results of the demographic analysis are available in the docket for this action (Docket ID No. EPA–HQ–OAR–2018–0747) in the technical report *Analysis of Demographic Factors for Populations Living Near MCM Facilities.*

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because this action does not present any changes to the rule that would affect environmental health or safety risks, including those that would present a disproportionate risk to children.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Administrative practice and procedure, Air pollution control, Business and industry, Carbon oxides, Environmental protection, Hazardous substances, Intergovernmental relations, Nitrogen oxides, Ozone, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Michael S. Regan,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is 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.*

Subpart HHHHH—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing

■ 2. Amend § 63.7995 by revising paragraphs (a) introductory text and (b) and adding paragraph (f) to read as follows:

§ 63.7995 When do I have to comply with this subpart?

* * * * *

(a) Except as specified in paragraphs (e) and (f) of this section, if you have a new affected source, you must comply with this subpart according to the requirements in paragraphs (a)(1) and (2) of this section.

* * * * *

(b) Except as specified in paragraphs (e) and (f) of this section, if you have an existing affected source on December 11, 2003, then you must comply with the requirements for existing sources in this subpart no later than December 11, 2006.

* * * * *

(f) All affected sources that commenced construction or reconstruction on or before June 7, 2022, must be in compliance with the requirements listed in paragraphs (f)(1) through (4) of this section upon initial startup or February 22, 2024, whichever is later. All affected sources that commenced construction or reconstruction after June 7, 2022, must be in compliance with the requirements listed in paragraphs (f)(1) through (4) of this section upon initial startup, or February 22, 2023, whichever is later.

(1) The general requirements specified in § 63.8005(a)(1)(iii) and (i).

(2) The reporting requirements specified in § 63.8075.

(3) The recordkeeping requirements specified in § 63.8080(i) and (g).

(4) The general provisions as specified in table 10 to this subpart.

■ 3. Amend § 63.8000 by revising paragraph (d)(1) introductory text and adding paragraph (d)(1)(vii) to read as follows:

§ 63.8000 What are my general requirements for complying with this subpart?

* * * * *

(d) * * *

(1) *Requirements for performance tests.* The requirements specified in paragraphs (d)(1)(i) through (vii) of this section apply instead of or in addition to the requirements for performance testing of control devices as specified in subpart SS of this part.

* * * * *

(vii) You must conduct periodic performance tests and establish the operating limits required by § 63.8005(i) within 5 years following the previous performance test. You must conduct the initial or first periodic performance test before February 22, 2024, unless you are already required to complete a periodic performance test as a requirement of renewing your facility's operating permit under 40 CFR part 70 or 71, and have conducted a performance test on or before February 22, 2024. Thereafter you must conduct a performance test no later than 5 years following the previous performance test. Operating limits must be confirmed or reestablished during each performance test.

* * * * *

■ 4. Amend § 63.8005 by:

■ a. Revising paragraphs (a)(1) introductory text and (a)(1)(i);

■ b. Adding paragraph (a)(1)(iii);

■ c. Revising paragraph (d)(1); and

■ d. Adding paragraph (i).

The revisions and additions read as follows:

§ 63.8005 What requirements apply to my process vessels?

(a) * * *

(1) You must meet each emission limit and work practice standard in table 1 to this subpart that applies to you, and you must meet each applicable requirement specified in § 63.8000(b), except as specified in paragraphs (a)(1)(i) through (iii) of this section.

(i) Except as provided in paragraph (a)(1)(iii) of this section, you are not required to meet the emission limits and work practice standards in table 1 to this subpart if you comply with § 63.8050 or § 63.8055.

* * * * *

(iii) You must meet the inorganic HAP emissions limit in table 1 to this subpart during the addition of material containing metal HAP to a process vessel. You are not required to meet this limit for the addition of pigments and other solids that are in paste, slurry, or liquid form.

* * * * *

(d) * * *

(1) To demonstrate initial compliance with a percent reduction emission limit in table 1 to this subpart, you must conduct the performance test under conditions as specified in § 63.7(e)(1), except as specified in paragraph (d)(5) of this section, and except that the performance test must be conducted under worst-case conditions. Also, the performance test for a control device used to control emissions from process vessels must be conducted according to § 63.1257(b)(8), including the submittal of a site-specific test plan for approval prior to testing. The requirements in § 63.997(e)(1)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for process vessels.

* * * * *

(i) *Inorganic HAP standards.* You must demonstrate initial compliance with the inorganic HAP limit in table 1 to this subpart and as specified in paragraph (a)(1)(iii) of this section by following the requirements specified in paragraph (i)(1) or (2) of this section. You must demonstrate continuous compliance with the requirements in § 63.11583(a) through (e) and (h).

(1) You must follow the requirements specified in paragraphs (a)(1)(i) through (iii) of this section and include the results in your notification of compliance status report in accordance with § 63.8070.

(i) You must conduct the tests under conditions that represent normal operation, during which dry materials are added; tests may be conducted whether or not those dry materials contain metal HAP.

(ii) You must perform the test using EPA Method 5 in appendix A to 40 CFR part 60.

(iii) You must conduct a minimum of three separate test runs with a minimum sample volume of 70 dry standard cubic feet (2 dry standard cubic meters) per run for each performance test required in this section, as specified in § 63.7(e)(3).

(2) For existing sources only, you may demonstrate initial compliance using the results of an emissions test conducted in the past 5 years provided the test meets the requirements in paragraph (i)(1) of this section.

■ 5. Amend § 63.8075 by revising paragraph (d)(1) to read as follows:

§ 63.8075 What reports must I submit and when?

* * * * *

(d) * * *

(1) You must submit the notification of compliance status report no later than 150 days after the applicable compliance date specified in § 63.7995. You must submit a separate notification of compliance status report after the applicable compliance date specified in § 63.7995(e) and (f).

* * * * *

■ 6. Amend § 63.8080 by revising paragraph (g) and paragraph (i) introductory text to read as follows:

§ 63.8080 What records must I keep?

* * * * *

(g) If you establish separate operating limits as allowed in § 63.8005(e) or (i), you must maintain a log of operation or a daily schedule indicating the time when you change from one operating limit to another.

* * * * *

(i) On and after the compliance date specified in § 63.7995(e), for each deviation from an emission limitation reported under § 63.8075(e)(5) or § 63.8005(i), a record of the information specified in paragraphs (i)(1) and (2) of this section, as applicable.

* * * * *

■ 7. Amend § 63.8105 in paragraph (g) by adding the definitions "Bag Leak Detection System", "Fabric filter", and "Material containing metal HAP", in alphabetical order, to read as follows:

§ 63.8105 What definitions apply to this subpart?

* * * * *

(g) * * *

Bag Leak Detection System (BLDS) means a system that is capable of continuously monitoring particulate matter (dust) loadings in the exhaust of a baghouse in order to detect bag leaks and other upset conditions. A BLDS includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

* * * * *

Fabric filter means an air collection and control system that utilizes a bag filter to reduce the emissions of metal HAP and other particulate matter.

* * * * *

Material containing metal HAP means a material containing compounds of manganese, antimony, nickel, lead, cobalt, chromium, cadmium, and arsenic compounds, in amounts greater than or equal to 0.1 percent by weight as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material.

* * * * *

■ 8. Table 1 to subpart HHHHH of part 63 is revised and republished to read as follows:

TABLE 1 TO SUBPART HHHHH OF PART 63—EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR PROCESS VESSELS

[As required in § 63.8005, you must meet each emission limit and work practice standard in the following table that applies to your process vessels.]

For each . . .	You must . . .	And you must . . .
1. Portable process vessel at an existing source.	a. Equip the vessel with a cover or lid that must be in place at all times when the vessel contains a HAP, except for material additions and sampling.	Nonapplicable.
2. Stationary process vessel at an existing source.	a. Equip the vessel with a cover or lid that must be in place at all times when the vessel contains a HAP, except for material additions and sampling; or b. Equip the vessel with a tightly fitting vented cover or lid that must be closed at all times when the vessel contains HAP, except for material additions and sampling. c. As specified in § 63.8005(i), on or before February 22, 2024, during the addition of dry material, route material containing metal HAP to a capture and control system that is maintained and operated according to the provisions of § 63.8005.	i. Considering both capture and any combination of control (except a flare), reduce emissions of organic HAP with a vapor existing pressure ≥0.6 kPa by ≥75 percent by weight, and reduce emissions of organic HAP with a vapor pressure <0.6 kPa by ≥60 percent by weight. i. Reduce emissions of organic HAP with a vapor pressure ≥0.6 kPa by ≥75 percent by weight, and reduce emissions of organic HAP with a vapor pressure <0.6 kPa by ≥60 percent by weight, by venting emissions through a closed-vent system to any combination of control devices (except a flare); or ii. Reduce emissions of total organic HAP by venting emissions from a non-halogenated vent stream through a closed-vent system to a flare; or iii. Reduce emissions of total organic HAP by venting emissions through a closed-vent system to a condenser that reduces the outlet gas temperature to: <−10 °C if the process vessel contains HAP with a partial pressure <0.6 kPa, or <−2 °C if the process vessel contains HAP with a partial pressure ≥0.6 kPa and <17.2 kPa, or <−5 °C if the process vessel contains HAP with a partial pressure ≥17.2 kPa. i. Reduce emissions of material containing metal HAP to 0.014 gr/dscf or less.
3. Portable and stationary process vessel at a new source.	a. Equip the vessel with a tightly fitting vented cover or lid that must be closed at all times when the vessel contains HAP, except for material additions and sampling. b. As specified in § 63.8005(i), upon startup or February 22, 2023, whichever is later, during the addition of dry material, route material containing metal HAP to a capture and control system that is maintained and operated according to the provisions of § 63.8005.	i. Reduce emissions of total organic HAP by ≥95 percent by weight by venting emissions through a closed-vent system to any combination of control devices (except a flare); or ii. Reduce emissions of total organic HAP by venting emissions from a non-halogenated vent stream through a closed-vent system to a flare; or iii. Reduce emissions of total organic HAP by venting emissions through a closed-vent system to a condenser that reduces the outlet gas temperature to: <−4 °C if the process vessel contains HAP with a partial pressure <0.7 kPa, or <−20 °C if the process vessel contains HAP with a partial pressure ≥0.7 kPa and <17.2 kPa, or <−30 °C if the process vessel contains HAP with a partial pressure ≥17.2 kPa. i. Reduce emissions of material containing metal HAP to 0.0079 gr/dscf or less.

TABLE 1 TO SUBPART HHHHH OF PART 63—EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR PROCESS VESSELS—Continued

[As required in § 63.8005, you must meet each emission limit and work practice standard in the following table that applies to your process vessels.]

For each . . .	You must . . .	And you must . . .
4. Halogenated vent stream from a process vessel subject to the requirements of item 2 or 3 of this table for which you use a combustion control device to control organic HAP emissions.	a. Use a halogen reduction device after the combustion control device; or. b. Use a halogen reduction device before the combustion control device.	i. Reduce overall emissions of hydrogen halide and halogen HAP by ≥95 percent; or ii. Reduce overall emissions of hydrogen halide and halogen HAP to ≤0.45 kilogram per hour (kg/hr). Reduce the halogen atom mass emission rate to ≤0.45 kg/hr.

[FR Doc. 2023–03562 Filed 2–21–23; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 122 and 123

[EPA–HQ–OW–2022–0834; FRL–10123–05–OW]

RIN 2040–AG27

NPDES Small MS4 Urbanized Area Clarification; Withdrawal of Direct Final Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Withdrawal of direct final rule.

SUMMARY: Due to the receipt of an adverse comment, the Environmental Protection Agency (EPA) is withdrawing the direct final rule "NPDES Small MS4 Urbanized Area Clarification," published on December 2, 2022.

DATES: Effective February 22, 2023, the EPA withdraws the direct final rule published at 87 FR 73965, on December 2, 2022.

FOR FURTHER INFORMATION CONTACT: Heather Huddle, Water Permits Division (MC4203), Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20004; telephone number: (202) 564–7932; email address: *huddle.heather@epa.gov.*

SUPPLEMENTARY INFORMATION: On December 2, 2022, the EPA published a direct final rule (87 FR 73965). We stated in that direct final rule that if we received adverse comment by January 3, 2023 (extended to January 18, 2023 (87 FR 80079, December 29, 2022)), the direct final rule would not take effect and we would publish a timely withdrawal in the **Federal Register**. Because the EPA subsequently received adverse comment on that direct final rule, we are withdrawing the direct final rule.

The EPA published a parallel proposed rule on the same day (87 FR 74066, December 2, 2022) as the direct final rule, which proposed the same rule changes as the direct final rule. The proposed rule invited comment on the substance of these rule changes. The EPA will respond to comments as part of any final action it takes on the parallel proposed rule. As stated in the direct final rule and the parallel proposed rule, we will not institute a second comment period on this action.

List of Subjects

40 CFR Part 122

Environmental protection, Stormwater, Water pollution.

40 CFR Part 123

Environmental protection, Stormwater, Water pollution.

Michael S. Regan,

Administrator.

■ Accordingly, as of February 22, 2023, the EPA withdraws the direct final rule amending 40 CFR parts 122 and 123, which published at 87 FR 73965, on December 2, 2022.

[FR Doc. 2023–03590 Filed 2–21–23; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

[EPA–HQ–OLEM–2022–0319; EPA–HQ–OLEM–2022–0527; EPA–HQ–OLEM–2022–0579; FRL–10632–02–OLEM]

Deletion From the National Priorities List

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) announces the deletion of one site and the partial deletion of two sites from the Superfund National Priorities List (NPL). The NPL, created under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, is an appendix of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The EPA and the states, through their designated state agencies, have determined that all appropriate response actions under CERCLA have been completed. However, this deletion does not preclude future actions under Superfund.

DATES: The document is effective February 22, 2023.

ADDRESSES: *Docket:* EPA has established a docket for this action under the Docket Identification included in Table 1 in the **SUPPLEMENTARY INFORMATION** section of this document. All documents in the docket are listed on the *https://www.regulations.gov* website. The Final Close-Out Report (FCOR, for a full site deletion) or the Partial Deletion Justification (PDJ, for a partial site deletion) is the primary document which summarizes site information to support the deletion. It is typically written for a broad, non-technical audience and this document is included in the deletion docket for each of the sites in this rulemaking. Although listed in the index, some information is not publicly available, *i.e.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Docket materials are available through *https://www.regulations.gov* or at the corresponding Regional Records Centers. Locations, addresses, and phone numbers of the Regional Records Center follows.

- Region 4 (AL, FL, GA, KY, MS, NC, SC, TN), U.S. EPA, 61 Forsyth Street SW, Mail code 9T25, Atlanta, GA 30303.
- Region 5 (IL, IN, MI, MN, OH, WI), U.S. EPA Superfund Division Records Manager, Mail code SRC–7J, Metcalfe Federal Building, 7th Floor South, 77 West Jackson Boulevard, Chicago, IL 60604; 312/886–4465.
- Region 6 (AR, LA, NM, OK, TX), US EPA Region 6 Records Center 1201 Elm

requirements, Sulfur oxides, Volatile organic compounds.

Adam Ortiz,

Regional Administrator, Region III.

For the reasons stated in the preamble, the EPA amends 40 CFR part 52 as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

■ 1. The authority citation for part 52 continues to read as follows:

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

Subpart XX—West Virginia

■ 2. In § 52.2520, the table in paragraph (c) entitled ''EPA-Approved Regulations in the West Virginia SIP'' is amended by revising the entries for ''Section 45–8–1'', ''Section 45–8–2'', ''Section 45–8–3'', and ''Section 45–8–4'' under the heading ''[45 CSR] Series 8 Ambient Air Quality Standards'' to read as follows:

§ 52.2520 Identification of plan.

* * * * *

(c) * * *

EPA-APPROVED REGULATIONS IN THE WEST VIRGINIA SIP

State citation [Chapter 16–20 or 45 CSR]	Title/subject	State effective date	EPA approval date	Additional explanation/citation at 40 CFR 52.2565
*	*	*	*	*
[45 CSR] Series 8 Ambient Air Quality Standards				
Section 45–8–1	General	6/1/21	11/10/2022, [Insert **Federal Register** citation].	Docket #2022–0528.
Section 45–8–2	Definitions	6/1/21	11/10/2022, [Insert **Federal Register** citation].	Docket #2022–0528.
Section 45–8–3	Adoption of Standards	6/1/21	11/10/2022, [Insert **Federal Register** citation].	Docket #2022–0528.
Section 45–8–4	Inconsistency Between Rules	6/1/21	11/10/2022, [Insert **Federal Register** citation].	Docket #2022–0528.
*	*	*	*	*

* * * * *

[FR Doc. 2022–24339 Filed 11–9–22; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2021–0016; FRL–8339–02–OAR]

RIN 2060–AV34

National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes the technology review conducted for the paint stripping and miscellaneous surface coating operations area source categories regulated under national emission standards for hazardous air pollutants (NESHAP). These final amendments also address provisions regarding electronic reporting; make miscellaneous clarifying and technical corrections; simplify the petition for exemption process; and clarify requirements for emissions during periods of startup, shutdown, and malfunction (SSM). We are making no revisions to the numerical emission limits based on the technology review.

DATES: This final rule is effective on November 10, 2022. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of November 10, 2022.

ADDRESSES: The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA–HQ–OAR–2021–0016. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *https://www.regulations.gov/,* or in hard copy at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Lisa Sutton, Sector Policies and Programs Division (D243–04), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–3450; fax number: (919) 541–4991; and email address: *sutton.lisa@epa.gov.*

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. Throughout this document the use of ''we,'' ''us,'' or ''our'' is intended to refer to the EPA. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

ASHRAE American Society of Heating, Refrigerating, and Air-Conditioning Engineers
CAA Clean Air Act
CDX Central Data Exchange
CEDRI Compliance and Emissions Data Reporting Interface
CFR Code of Federal Regulations

EPA Environmental Protection Agency
FR Federal Register
GACT generally available control technology
HAP hazardous air pollutant(s)
HVLP high-volume, low-pressure
IBR incorporation by reference
km kilometer
MACT maximum achievable control technology
MeCl methylene chloride
NESHAP national emission standards for hazardous air pollutants
NTTAA National Technology Transfer and Advancement Act
OMB Office of Management and Budget
OSHA Occupational Safety and Health Administration
PDF portable document format
PRA Paperwork Reduction Act
RFA Regulatory Flexibility Act
SSM startup, shutdown, and malfunction
the court United States Court of Appeals for the District of Columbia Circuit
UMRA Unfunded Mandates Reform Act
U.S.C. United States Code

Background information. On November 19, 2021, the EPA proposed revisions to the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP based on our technology review (86 FR 66130). In this action, we are finalizing decisions and revisions for the rule. We summarize some of the more significant comments we timely received regarding the proposed rule and provide our responses in this preamble. A summary of all other public comments on the proposal and the EPA's responses to those comments is available in *Summary of Public Comments and Responses for the Final Area Source Surface Coating and Paint Stripping Rule,* Docket ID No. EPA–HQ–OAR–2021–0016. A "track changes" version of the regulatory language that incorporates the changes in this action is available in the docket.

Organization of this document. The information in this preamble is organized as follows:

I. General Information
A. Does this action apply to me?
B. Where can I get a copy of this document and other related information?
C. Judicial Review and Administrative Reconsideration
II. Background
A. What is the statutory authority for this action?
B. What are the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories and how does the NESHAP regulate HAP emissions from the source categories?
C. What changes did we propose for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories in our November 19, 2021, technology review?
III. What is included in this final rule?
A. What are the final rule amendments based on the technology review for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories?
B. What are the final rule amendments addressing emissions during periods of startup, shutdown, and malfunction?
C. What other changes have been made to the NESHAP?
D. What are the effective and compliance dates of the standards?
IV. What is the rationale for our final decisions and amendments for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories?
A. Technology Review for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources Source Categories
B. Electronic Reporting
C. SSM Provisions
D. Petition for Exemption
V. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted
A. What are the affected facilities?
B. What are the air quality impacts?
C. What are the cost impacts?
D. What are the economic impacts?
E. What are the benefits?
F. What analysis of environmental justice did we conduct?
G. What analysis of children's environmental health did we conduct?
VI. Statutory and Executive Order Reviews
A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
B. Paperwork Reduction Act (PRA)
C. Regulatory Flexibility Act (RFA)
D. Unfunded Mandates Reform Act (UMRA)
E. Executive Order 13132: Federalism
F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51
J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
K. Congressional Review Act (CRA)

I. General Information

A. Does this action apply to me?

Regulated entities. Categories and entities potentially regulated by this action are shown in Table 1 of this preamble.

TABLE 1—NESHAP, INDUSTRIAL, AND GOVERNMENT SOURCES AFFECTED BY THIS FINAL ACTION

NESHAP-regulated category	NAICS code	Regulated entities [a]
Aerospace Equipment	336413 336414 336415 54171	Aircraft engines, aircraft parts, aerospace ground equipment.
Automobiles and Automobile Parts	335312 336111 336211 336310 33632 33633 33634 33637 336390 441110 441120 811121	Engine parts, vehicle parts and accessories, brakes, axles, etc. Motor vehicle body manufacturing and automobile assembly plants. New and used car dealers. Automotive body, paint, and interior repair and maintenance.
Chemical Manufacturing and Product Preparation.	325110 325120 325130 325180 325192	Petrochemicals, Industrial Gases, Inorganic Dyes and Pigments, Basic Inorganic and Organic Chemicals, Cyclic Crude and Intermediates, Ethyl Alcohol, Miscellaneous Chemical Production and Preparation.

TABLE 1—NESHAP, INDUSTRIAL, AND GOVERNMENT SOURCES AFFECTED BY THIS FINAL ACTION—Continued

NESHAP-regulated category	NAICS code	Regulated entities [a]
	325193	
	325199	
	325998	
Extruded Aluminum	331318	Extruded aluminum, architectural components, coils, rod, and tubes.
	331524	
	332321	
	332323	
Government	Not Applicable	Government entities, besides Department of Defense, that maintain vehicles, such as school buses, police and emergency vehicles, transit buses, or highway maintenance vehicles.
Heavy Equipment	33312	Tractors, earth moving machinery.
	333611	
	333618	
Job Shops	332312	Manufacturing industries not elsewhere classified (e.g., bezels, consoles, panels, lenses).
	332722	
	332813	
	332991	
	332999	
	334118	
	336413	
	339999	
Large Trucks and Buses	33612	Large trucks and buses.
	336211	
Metal Buildings	332311	Prefabricated metal buildings, carports, docks, dwellings, greenhouses, panels for buildings.
Metal Containers	33242	Drums, kegs, pails, shipping containers.
	81131	
	322219	
	331513	
	332439	
Metal Pipe and Foundry	331110	Plate, tube, rods, nails, etc.
	331513	
	33121	
	331221	
	331511	
Rail Transportation	33651	Brakes, engines, freight cars, locomotives.
	482111	
Recreational Vehicles and Other Transportation Equipment.	321991	Mobile Homes. Motorcycles, motor homes, semi-trailers, truck trailers. Miscellaneous transportation related equipment and parts. Travel trailer and camper manufacturing.
	3369	
	331318	
	336991	
	336211	
	336112	
	336212	
	336213	
	336214	
	336390	
	336999	
	33635	
	56121	
	8111	
	56211	
Rubber-to- Metal Products	326291	Engine mounts, rubberized tank tread, harmonic balancers.
	326299	
Structural Steel	332311	Joists, railway bridge sections, highway bridge sections.
	332312	
Waste Treatment, Disposal, and Materials Recovery.	562211	Hazardous Waste Treatment and Disposal, Solid Waste Landfill, Solid Waste Combustors and Incinerators, Other Nonhazardous Waste Treatment and Disposal, Materials Recovery.
	562212	
	562213	
	562219	
	562920	
Other Industrial and Commercial	211130	Natural Gas Liquid Extraction.
	311942	Spices and Extracts.
	331313	Alumina Refining.
	337214	Office furniture, except wood. Reupholstery and Furniture
	811420	Repair.
	325211	Plastics Material Synthetic Resins, and Nonvulcanizable Elastomers.
	325510	Paint and Coating Manufacturing.
	32614, 32615	Plastic foam products (e.g., pool floats, wrestling mats, life jackets).

TABLE 1—NESHAP, INDUSTRIAL, AND GOVERNMENT SOURCES AFFECTED BY THIS FINAL ACTION—Continued

NESHAP-regulated category	NAICS code	Regulated entities [a]
	326199	Plastic products not elsewhere classified (e.g., name plates, coin holders, storage boxes, license plate housings, cosmetic caps, cup holders).
	333316	Office machines.
	33422	Radio and television broadcasting and communications equipment (e.g., cellular telephones).
	339112, 339113, 339114, 339115, 339116	Medical equipment and supplies.
	33992	Sporting and athletic goods.
	33995	Signs and advertising specialties.
	336611, 336612	Boat and ship building.
	713930	Marinas, including boat repair yards.

[a] Regulated entities means area source facilities that use methylene chloride (MeCl)-containing paint strippers to strip paint from, or that apply surface coatings to, these parts or products.

Table 1 of this preamble is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by the final action for the source categories listed. To determine whether your facility is affected, you should examine the applicability criteria in the appropriate NESHAP. If you have any questions regarding the applicability of any aspect of this NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this final action will also be available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at: *https://www.epa.gov/stationary-sources-air-pollution/paint-stripping-and-miscellaneous-surface-coating-operations.* Following publication in the **Federal Register,** the EPA will post the **Federal Register** version and key technical documents at this same website.

C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the court) by January 9, 2023. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

A. What is the statutory authority for this action?

The statutory authority for this action is provided by sections 112 and 301 of the CAA, as amended (42 U.S.C. 7401 *et seq.*). Section 112(d)(6) requires the EPA to review standards promulgated under CAA section 112(d) and revise them ''as necessary (taking into account developments in practices, processes, and control technologies)'' no less often than every 8 years following promulgation of those standards. This is referred to as a ''technology review'' and is required for all standards established under CAA section 112(d), including generally available control technology (GACT) standards that apply to area sources. This action constitutes the CAA section 112(d)(6) technology review for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP.

Several additional CAA sections are relevant to this action as they specifically address regulation of hazardous air pollutant emissions from area sources. Collectively, CAA sections 112(c)(3), (d)(5), and (k)(3) are the basis of the Area Source Program under the Urban Air Toxics Strategy, which provides the framework for regulation of area sources under CAA section 112.

Section 112(k)(3)(B) of the CAA required the EPA to identify at least 30 HAP that posed the greatest potential health threat in urban areas with a primary goal of achieving a 75 percent reduction in cancer incidence attributable to HAP emitted from stationary sources. As discussed in the Integrated Urban Air Toxics Strategy (64 FR 38706, 38715, July 19, 1999), the EPA identified 30 HAP emitted from area sources that pose the greatest potential health threat in urban areas, and these HAP are commonly referred to as the ''30 urban HAP.''

Section 112(c)(3), in turn, required the EPA to list sufficient categories or subcategories of area sources to ensure that area sources representing 90 percent of the emissions of the 30 urban HAP were subject to regulation. The EPA implemented these requirements through the Integrated Urban Air Toxics Strategy by identifying and setting standards for categories of area sources including the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories that are addressed in this action.

CAA section 112(d)(5) provides that, for area source categories, in lieu of setting maximum achievable control technology (MACT) standards (which are generally required for major source

categories), the EPA may elect to promulgate standards or requirements for area sources ''which provide for the use of generally available control technologies or management practices [GACT] by such sources to reduce emissions of hazardous air pollutants.'' In developing such standards, the EPA evaluates the control technologies and management practices that reduce HAP emissions that are generally available for each area source category. Consistent with the legislative history, we can consider costs and economic impacts in determining what constitutes GACT.

GACT standards were set for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories in 2008. As noted earlier in this document, this final action presents the required CAA 112(d)(6) technology review for those source categories.

B. What are the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories and how does the NESHAP regulate HAP emissions from the source categories?

The EPA promulgated the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP on January 9, 2008 (73 FR 1738). The standards are codified at 40 CFR part 63, subpart HHHHHH. Technical corrections were promulgated on February 13, 2008 (73 FR 8408). The paint stripping and miscellaneous surface coating industry consists of facilities engaged in paint stripping using MeCl, and/or engaged in coating of miscellaneous parts and/or products made of metal or plastic, or combinations of metal and plastic, or motor vehicle or mobile equipment refinishing. The NESHAP's title refers to a single set of emission standards that addresses three source categories: (1) Paint Stripping; (2) Miscellaneous Surface Coating; and (3) Motor Vehicle and Mobile Equipment Surface Coating. All facilities in this source category are area sources. The source categories covered by the GACT standards currently include approximately 40,000 facilities.

The NESHAP defines a ''coating'' as a material spray-applied to a substrate for decorative, protective, or functional purposes. For the purposes of this subpart, coating does not include the following materials: (1) decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances; (2) paper film or plastic film that may be pre-coated with an adhesive by the film manufacturer; (3) adhesives, sealants, maskants, or caulking materials; (4) temporary protective coatings, lubricants, or surface preparation materials; (5) in-mold coatings that are spray-applied in the manufacture of reinforced plastic composite parts. (40 CFR 63.11180.)

The NESHAP does not apply to paint stripping or surface coating operations that are specifically covered under another area source NESHAP and does not apply to paint stripping or surface coating operations that meet any of the following:

- Paint stripping or surface coating performed on-site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state), the National Aeronautics and Space Administration, or the National Nuclear Security Administration.
- Paint stripping or surface coating of military munitions manufactured by or for the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state) or equipment directly and exclusively used for the purposes of transporting military munitions.
- Paint stripping or surface coating performed by individuals on their personal vehicles, possessions, or property, either as a hobby or for maintenance of their personal vehicles, possessions, or property. The NESHAP also does not apply when these operations are performed by individuals for others without compensation. However, an individual who spray-applies surface coating to more than two motor vehicles or pieces of mobile equipment per year is subject to the requirements in this subpart that pertain to motor vehicle and mobile equipment surface coating regardless of whether compensation is received.
- Paint stripping or surface coating for research and laboratory activities, for quality control activities, or for activities that are covered under another area source NESHAP.

The primary HAP emitted from paint stripping operations is the MeCl contained in paint stripper formulations. The primary source of the MeCl emissions in the paint stripping source category comes from evaporative losses during the use and storage of MeCl-containing paint strippers.

All sources conducting paint stripping involving the use of MeCl must implement management practice standards that reduce emissions of MeCl by minimizing evaporative losses of MeCl. In addition to the management practices, sources that use more than one ton of MeCl per year must develop and implement a MeCl minimization plan consisting of a written plan with the criteria to evaluate the necessity of MeCl in the stripping operations and management techniques to minimize MeCl emissions when it is needed in the paint stripping operation.

The MeCl minimization plan evaluation criteria specify only using a MeCl-containing paint stripper when an alternative on-site stripping method or material is incapable of accomplishing the work as determined by the operator. Alternative methods to reduce MeCl usage may include: (1) non- or low-MeCl-containing chemical strippers; (2) mechanical stripping; (3) abrasive blasting (including dry or wet media); or (4) thermal and cryogenic decomposition.

The management practices required to be contained in the plan include optimizing stripper application conditions, reducing exposure of stripper to the air, and practicing proper storage and disposal of materials containing MeCl. Sources are required to submit the plan to the appropriate air authority, keep a written copy of the plan on site, and post a placard or sign outlining the evaluation criteria and management techniques in each area where MeCl-containing paint stripping operations occur. They are also required to review the plan annually and update it based on the experiences of the previous year or the availability of new methods of stripping, and to keep a record of the review and changes made to the plan on file. Sources must maintain copies of the specified records for a period of at least 5 years after the date of each record.

The primary HAP emitted from surface coating operations are compounds of cadmium, chromium, lead, manganese, and nickel from heavy metals contained in coatings. The target HAP compounds are emitted as the coatings are atomized during spray application. A substantial fraction of coating that is atomized does not reach the part and becomes what is termed ''overspray.'' The fraction that becomes overspray depends on many variables, but two of the most important are the type of spray equipment being used and the skill of the painter. Some overspray lands on surfaces of the spray booth and the masking paper that is usually placed around the surface being sprayed, but the rest of the overspray is drawn into the spray booth exhaust system. If the spray booth has filters, most of the overspray is captured by the filters; otherwise, it is exhausted to the atmosphere.

All motor vehicle and mobile equipment surface coating operations

and those miscellaneous surface coating operations that spray-apply coatings containing the target HAP must apply the coatings with a high-volume, low-pressure (HVLP) spray gun, electrostatic spray gun, airless spray gun, air-assisted airless spray gun, or a spray gun demonstrated to be equal in transfer efficiency to an HVLP spray gun. All spray-applied coatings must be applied in a prep station or spray booth. For motor vehicle and mobile equipment surface coating, prep stations and spray booths that are large enough to hold a complete vehicle must have four complete side walls or curtains and a complete roof. For motor vehicle and mobile equipment subassemblies and for miscellaneous surface coating, coatings must be spray-applied in a booth with a full roof and at least three walls or side curtains. Openings are allowed in the sidewalls and roof of booths used for miscellaneous surface coating to allow for parts conveyors, if needed. The exhaust from the prep station or spray booth must be fitted with filters demonstrated to achieve at least 98 percent capture efficiency of paint overspray.

Additionally, sources are required to demonstrate that (1) all painters that spray-apply coatings are certified as having completed operator training to improve coating transfer efficiency and minimize overspray and (2) no spray gun cleaning is performed by spraying solvent through the gun creating an atomized mist (*i.e.,* spray guns must be cleaned in an enclosed spray gun cleaner or by cleaning the disassembled gun parts by hand). Each painter must be certified as having completed classroom and hands-on training in the proper selection, mixing, and application of coatings, and must complete refresher training at least once every 5 years. The initial and refresher training must address the following topics:

- Spray gun equipment selection, set up, and operation, including measuring coating viscosity, selecting the proper fluid tip or nozzle, and achieving the proper spray pattern, air pressure and volume, and fluid delivery rate.
- Spray technique for different types of coatings to improve transfer efficiency and minimize coating usage and overspray, including maintaining the correct spray gun distance and angle to the part, using proper banding and overlap, and reducing lead and lag spraying at the beginning and end of each stroke.
- Routine spray booth and filter maintenance, including filter selection and installation.
- Environmental compliance with the requirements of this subpart.

Additional detail on the paint stripping and miscellaneous surface coating operations at area sources source categories and NESHAP requirements are provided in the proposal preamble (86 FR 66130, November 19, 2021).

C. What changes did we propose for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories in our November 19, 2021, technology review?

On November 19, 2021, the EPA published a proposed rule in the **Federal Register** for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP, 40 CFR part 63, subpart HHHHHH, that took into consideration the technology review analyses. Based on our technology review, we did not identify any cost-effective developments in practices, processes, or control technologies for the three source categories addressed by the NESHAP. We proposed to amend electronic reporting provisions, simplify the petition for exemption process, clarify requirements addressing emissions during periods of SSM, and make miscellaneous clarifying and technical corrections.

III. What is included in this final rule?

This action finalizes the EPA's determinations pursuant to the technology review provisions of CAA section 112 for the three source categories addressed by the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP. This action finalizes other changes to the NESHAP, by adding electronic reporting provisions, simplifying the petition for exemption process, clarifying requirements for addressing emissions during periods of SSM, and making miscellaneous clarifying and technical corrections.

A. What are the final rule amendments based on the technology review for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories?

We determined that there are no developments in practices, processes, and control technologies that warrant revisions to the GACT standards for these source categories. Therefore, we are not amending any emission standards pursuant to our review under CAA section 112(d)(6). We are, however, amending other provisions of the NESHAP, to add requirements for electronic submission of reports, simplify the petition for exemption process, clarify requirements addressing SSM, and make miscellaneous clarifying and technical corrections.

B. What are the final rule amendments addressing emissions during periods of startup, shutdown, and malfunction?

We are finalizing the proposed amendments to the Area Source Paint Stripping and Miscellaneous Surface Coating NESHAP to remove and revise provisions related to SSM. In its 2008 decision in *Sierra Club* v. *EPA,* 551 F.3d 1019 (D.C. Cir. 2008), the United States Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. Specifically, the court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemption violates the CAA's requirement that some section 112 standards apply continuously. With the issuance of the mandate in *Sierra Club* v. *EPA,* 40 CFR 63.6(f)(1) and (h)(1) are null and void. The EPA amended 40 CFR 63.6(f)(1) and (h)(1)) on March 11, 2021, to reflect the court order and correct the CFR to remove the SSM exemption. We are eliminating any cross-references to the vacated provisions in the regulatory language, including Table 1 to subpart HHHHHH of part 63 (General Provisions applicability table). We have also revised Table 1 to subpart HHHHHH of part 63 in several respects as is explained in more detail here. For example, we have eliminated the incorporation of the General Provisions' requirement that a source develop an SSM plan. We have also revised certain recordkeeping and reporting that is related to the SSM exemption as described in detail in the proposed rule and summarized again here. As detailed in section III.B.3 of the November 19, 2021, proposal preamble, we are adding general duty regulatory text at 40 CFR 63.11173(h) that reflects the general duty to minimize emissions without differentiating between normal operations, startup and shutdown, and malfunction events in describing the general duty. We are also revising 40 CFR 63.11173(h) to require that the standards apply at all times, consistent with the court decision in *Sierra Club* v. *EPA.*

In establishing the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained here, has not

established alternate standards for those periods. Startups and shutdowns are part of normal operations for the paint stripping and surface coating operations at area sources. Paint stripping and surface coating operations inherently involve frequent startup and shutdown while carrying out normal duties, and the emission standards were developed to control emissions in these situations. We have no data indicating that emissions are different during startup or shutdown than during other normal operations. We have determined that facilities in these source categories can meet the applicable emission standards in this NESHAP at all times, including periods of startup and shutdown. The legal rationale and detailed changes for SSM periods that we are finalizing here are set forth in the November 19, 2021, preamble to the proposed rule. See 86 FR 66141–42.

Further, the EPA is not finalizing standards for malfunctions. Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead, they are, by definition, sudden, infrequent, and not reasonably preventable failures of emissions control, process, or monitoring equipment. (40 CFR 63.2) (Definition of malfunction). As discussed in section III.B.3 of the November 19, 2021, proposal preamble, the EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards. This reading has been upheld as reasonable by the court in *U.S. Sugar Corp.* v. *EPA,* 830 F.3d 579, 606–610 (2016). For these source categories, it is unlikely that a malfunction would result in a violation of the standards, and no comments were submitted that would suggest otherwise. Refer to section III.B.3 of the November 19, 2021, proposal preamble for further discussion of the EPA's rationale for the decision not to set standards for malfunctions, as well as a discussion of the actions a facility could take in the unlikely event that a facility fails to comply with the standards as a result of a malfunction event.

C. What other changes have been made to the NESHAP?

These rules also finalize, as proposed, revisions to several other NESHAP requirements. We describe the revisions that apply to all the affected source categories in the following paragraphs.

1. Electronic Reporting Requirements

The EPA is finalizing the proposal that owners and operators of paint stripping and surface coating facilities submit electronic copies of initial notifications required in 40 CFR 63.9(b) and 63.11175(a), notifications of compliance status required in 40 CFR 63.9(h) and 63.11175(b), the annual notification of changes report required in 40 CFR 63.11176(a), and the report required in 40 CFR 63.11176(b) through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). For further information regarding the electronic data submission process, please refer to the memorandum titled *Electronic Reporting for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules,* available in the docket for this action. No specific form is necessary for the initial notifications required in 40 CFR 63.9(b) and 63.11175(a), notifications of compliance status required in 40 CFR 63.9(h) and 63.11175(b), the annual notification of changes report required in 40 CFR 63.11176(a), or the report required in 40 CFR 63.11176(b). The notifications will be required to be submitted via CEDRI in portable document format (PDF) files. More information is available in the November 19, 2021, proposal preamble (86 FR 66130).

2. Rule Clarifications and Other Changes

We are making plain language clarifications and revisions to better reflect regulatory intent. We also are making other changes, including updating references to equivalent test methods, making technical and editorial revisions, incorporation by reference (IBR) of alternative test methods, and simplifying the petition for exemption process. Our analyses and changes related to these issues are discussed in the following sections.

a. Submarines and Tanks Applicability

The EPA is clarifying in this preamble that the surface coating and paint stripping occurring at area sources of certain types of military equipment, such as military submarines (as opposed to those used for scientific research, for example) and military tanks is potentially subject to 40 CFR part 63, subpart HHHHHH, unless the surface coating or paint stripping is performed on site at installations owned or operated by the Armed Forces of the United States (including the Coast Guard and the National Guard of any such state), the National Aeronautics and Space Administration, or the National Nuclear Security Administration. Surface coating of this type of military equipment at original equipment manufacturers or offsite at a contractor's facility is not covered by the provisions in 40 CFR 63.11169(d)(1) and is subject to the requirements of 40 CFR part 63, subpart HHHHHH.

b. Coating HAP Content Definition

The EPA is amending the definition of "target HAP containing coating" in 40 CFR 63.11180 to clarify that compliance with the definition is based on the HAP content of the coating as applied, not on the HAP content of the coating components as purchased from the coating supplier.

c. Spray Gun Cup Liners

The EPA is amending the definition of "spray-applied coating operations" in 40 CFR 63.11180 to clarify that the allowance to use spray guns outside of a spray booth is based on the volume of the spray gun paint cup liner and not the volume of the paint cup, in those spray guns that use a disposable cup liner.

d. Circumvention of Paint Cup Capacity Intent

The EPA is also amending the definition of "spray-applied coating operations" in 40 CFR 63.11180 to clarify that repeatedly refilling and reusing a 3.0 fluid ounce cup or cup liner or using multiple 3.0 fluid ounce cup liners to complete a single spray-applied coating operation as a means of avoiding rule applicability will be considered an attempt to circumvent the requirements of subpart HHHHHH. The EPA accordingly reserves the right to bring enforcement actions against any person whose action equates to rule circumvention.

e. OSHA Carcinogenic Content

The EPA is removing references to Occupational Safety and Health Administration (OSHA)-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) because 29 CFR 1910.1200(d)(4) has been amended and no longer defines which compounds are carcinogens. We are replacing these references to 29 CFR 1910.1200(d)(4) with a list of those target HAP that must be counted if they are present at 0.1 percent by mass or greater in the definition of "target HAP containing coating" in 40 CFR 63.11180. All other target HAP must be counted if they are present at 1.0 percent or greater by mass.

f. Non-HAP Solvent Language

The EPA is removing the definition of ''non-HAP solvent'' from 40 CFR 63.11180 because there are no requirements to use non-HAP solvents and the definition has no other use in the rule.

g. Filter Test Method

The EPA is updating the spray booth filter test method in 40 CFR 63.11173, which was previously incorporated by reference, to the most recent American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) method. Section 63.11173 referenced ASHRAE Method 52.1, ''Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter, June 4, 1992.'' This method was retired in January 2009 and replaced by ANSI/ASHRAE Standard 52.2–2017 Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size. The EPA is also adding a reference to EPA Method 319—Determination of Filtration Efficiency for Paint Overspray Arrestors (Appendix A to 40 CFR part 63) to 40 CFR 63.11173 as an alternative to ANSI/ASHRAE Standard 52.2–2017. This is the same method referenced in the NESHAP for Aerospace Manufacturing and Rework (40 CFR part 63, subpart GG) to test paint spray booth filters used to meet the requirements to limit hexavalent chromium emissions.

h. Petition for Exemption Process

The EPA is amending 40 CFR 63.11170 to introduce a simplified petition for exemption process for motor vehicle or mobile equipment surface coating operations that do not spray-apply any coatings that contain the target HAP. Previously, all such sources were subject to the NESHAP, unless they demonstrated to the satisfaction of the Administrator that they do not spray-apply any coatings that contain the target HAP. The rule is being revised to allow sources to submit notification to the Administrator, as a simplified alternative to the petition for exemption process, that they do not spray-apply any coatings that contain the target HAP. Such sources will still be required to retain records that describe the coatings that are spray-applied in order to support the notification, but that information does not need to be reported to the Administrator. The Administrator maintains the authority to verify records retained on site, including whether the notification of exemption was sufficiently demonstrated. Sources may still petition for exemption using the existing process if they want confirmation of exemption.

D. What are the effective and compliance dates of the standards?

The amendments to the NESHAP being promulgated in this action are effective on November 10, 2022. For affected sources, the compliance date for the amendments being promulgated in this action is May 9, 2023. All affected facilities will continue to meet the current requirements of 40 CFR part 63, subpart HHHHHH, until the applicable compliance date of the amended rule. The EPA selected these compliance dates based on experience with similar industries, and the EPA's detailed justification for the selected compliance dates is included in the preamble to the proposed rule (86 FR 66142).

IV. What is the rationale for our final decisions and amendments for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories?

For each issue, this section provides a description of what we proposed and what we are finalizing for the issue, the EPA's rationale for the final decisions and amendments, and a summary of key comments and responses. For all comments not discussed in this preamble, comment summaries and the EPA's responses can be found in the comment summary and response document available in the docket.

A. Technology Review for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources Source Categories

1. What did we propose pursuant to CAA section 112(d)(6) for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories?

In performing a technology review of paint stripping and miscellaneous surface coating operations, the EPA consulted sources of data that included: the EPA's ECHO database; the EPA's RACT/BACT/LAER Clearinghouse; publicly available state air permit databases; regulatory actions promulgated subsequent to the Paint Stripping and Miscellaneous Surface Coating at Area Sources NESHAP; regional and state regulations and operating permits; site visit reports; and industry information. The EPA's review is described in a memorandum (''technology review memorandum'') titled *Technology Review for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources,* available in the docket for this action. Based on our review, we did not identify any developments in practices, processes, or control technologies for the paint stripping and miscellaneous surface coating operations at area sources source categories, and, therefore, we did not propose any changes to the emission standards under CAA section 112(d)(6). A summary of the EPA's findings in conducting the technology review of paint stripping and miscellaneous surface coating operations was included in the preamble to the proposed action (86 FR 66137).

2. How did the technology review change for the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources source categories?

We are making no changes to the conclusions of the technology review and are finalizing the results of the technology review for the paint stripping and miscellaneous surface coating operations at area sources source categories as proposed.

3. What key comments did we receive on the technology review, and what are our responses?

We received three comments objecting to our decision not to strengthen GACT standards based on a conclusion that there have been no technology developments.

Comment: One commenter stated that the EPA's proposed decision to not strengthen the GACT standards by requiring the use of only coatings that do not contain the target HAP conflicts with the EPA's own recognition that surface coating manufacturers have modified their products to produce new formulas that are free of target HAP. The commenter claimed that the EPA has failed to rationally explain why it does not require widespread use of these nontoxic formulas.

Response: The EPA notes that the current rule requirements have been very successful in moving this source category to HAP-free coatings and achieving significant reductions of metal HAP emissions. In many cases industry has succeeded in its goal of identifying HAP-free alternatives, but there are also many cases where that goal was not achievable. For example, hexavalent chromium-containing primers are particularly important to the U.S. aerospace industry. Interior surfaces and parts of the aircraft must be protected from corrosion for the life of the aircraft because they cannot be accessed once the aircraft is assembled. For this reason, the aerospace industry

is moving very slowly to replace hexavalent chromium-containing primers. Our current approach of requiring controls and work practices has been and will continue to be successful in reducing emissions, while still allowing this industry to produce coated products that meet the required specifications.

Comment: One commenter asserted that the EPA's proposed decision to not strengthen the GACT standards by requiring the use of only coatings that do not contain the target HAP is arbitrary because it invokes widespread technological improvement as a reason not to strengthen the standards. The commenters said that the EPA is obligated to require the use of GACT under 42 U.S.C. 7412(d)(5) and MACT under 42 U.S.C. 7412(d)(2). Under both provisions, the commenter stated, the EPA is required to adopt technologies in use by industry to reduce emissions as emission standards and cannot leave it up to the industry to decide whether to employ these proven technologies.

Response: The EPA affirmed in the original NESHAP that reformulation to HAP-free alternatives was a viable approach to emissions reduction. Coatings manufacturers have found many viable substitutions, but this is not universally true for all of the source categories subject to the NESHAP. The data the EPA has referenced indicating widespread reductions in the use of target HAP is specific to manufacturers of automotive surface coatings and does not cover the other source categories that are subject to the NESHAP. While the automotive industry has seen considerable improvements in surface coating technologies that avoid use of the target HAP in original equipment manufacture, automotive refinishers must sometimes use coatings that contain target HAP. In addition, other industries such as aerospace are still reliant on certain performance characteristics that can currently only be met through use of target HAP-containing coatings. Though viable alternatives are actively being researched through programs such as the Department of Defense's ASETSDefense program, suitable alternatives have not been found for many applications that rely on target HAP (*e.g.,* formulations that include hexavalent chromium compounds for corrosion resistance). The EPA is not required to set MACT standards for area sources, as under 112(d)(5) the EPA may elect to provide GACT standards instead for area sources, which it has done.

Comment: One commenter declared that the EPA's proposed decision to not strengthen the GACT standards by requiring the use of only coatings that do not contain the target HAP is arbitrary because the EPA dismisses the experience of states that have required stronger protections to feasibly reduce emissions. The commenter stated that while the EPA appears to assert that these protections would not reduce emissions, logic and the states' experience contradict that claim. The commenter also said that the EPA appears to claim that it should not adopt these stronger protections because it already considered them, but 42 U.S.C. 7412(d)(6) broadly requires the EPA to consider developments, and the EPA must explain why these developments should not be adopted. The commenter pointed out that in the 2007 rulemaking on which the EPA relies, the EPA speculated that a requirement to use formulas without hexavalent chromium or cadmium "could" lead to business closures due to a lack of alternative formulas with sufficient corrosion protection, but those requirements have now been in place for over a decade, and the EPA itself acknowledges that target-HAP free formulas are now more readily available. The commenter asserted that it is irrational and arbitrary for the EPA to continue to rely on speculation that alternative formulas could be inadequate, particularly given that there is zero record evidence that target HAP-free formulas are not widely available or perform worse than toxic formulas. The commenter contended that the EPA must rationally evaluate whether stronger protections should now be adopted in light of these developments and more than a decade of experience after California's ban on the use of the most toxic formulas.

Response: It was the EPA's determination in 2008 that such a ban was not reasonable, feasible, or cost-effective to be widely applied. HAP-free alternatives were available during development of the initial NESHAP, and there has been a continuing trend of further developing such HAP-free alternatives. However, not all coating manufacturers have eliminated coatings that contain the target HAP. Some manufacturers provide the same coating in both a target HAP-free version and one containing the target HAP for certain applications. Additionally, the data on coating manufacturers the EPA has referenced is specific to manufacturers of automotive surface coatings and does not cover the other source categories that are subject to the NESHAP. While the automotive industry has seen considerable improvements in surface coating technologies that avoid use of the target HAP in original equipment manufacture, automotive refinishers must sometimes use coatings that contain target HAP. In addition, other industries such as aerospace are still reliant on target HAP-containing coatings due to a lack of suitable alternatives that meet certain performance characteristics, such as corrosion resistance properties, which in many cases can still only be met with hexavalent chromium-containing coatings. Viable alternatives are actively being researched through programs such as the Department of Defense's Advanced Surface Engineering Technologies for a Sustainable Defense (ASETSDefense) program, and less hazardous alternatives have been authorized where possible, but alternatives have still not been found for many applications.

The commenter also claims that the EPA has dismissed the experiences of states that have required stronger protections to feasibly reduce emissions. However, the only state the commenter has specifically offered as an example is California. We assume that California's ban to which the commenter refers is the 2001 Air Borne Toxic Control Measure for Emissions of Hexavalent Chromium and Cadmium from Motor Vehicle and Mobile Equipment Coatings (ATCM). The ATCM only addresses motor vehicle and mobile equipment surface coatings; it does not cover any of the other source categories subject to the NESHAP. The commenter's statement fails to address other surface coating applications where substitution of non-HAP coatings is not always feasible. Additionally, the ATCM only eliminates the use of cadmium and chromium and does not apply to the other target HAP covered by the NESHAP.

4. What is the rationale for our final approach for the technology review?

For the reasons explained in the preamble to the proposed rules (86 FR 66130, November 19, 2021), and in our analysis of public comments explained above in section IV.A.3 of this preamble, we are making no changes to subpart HHHHHH to require additional controls pursuant to CAA section 112(d)(6) and are finalizing the results of the technology review as proposed.

B. Electronic Reporting

1. What did we propose?

We proposed that owners and operators of paint stripping and surface coating facilities submit electronic copies of initial notifications required in 40 CFR 63.9(b) and 63.11175(a),

notifications of compliance status required in 40 CFR 63.9(h) and 63.11175(b), the annual notification of changes report required in 40 CFR 63.11176(a), and the report required in 40 CFR 63.11176(b) through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). More detailed information on these changes can be found in the November 19, 2021, proposal preamble (86 FR 66140).

2. What changed since proposal?

We are finalizing the electronic reporting provisions as proposed with no changes (86 FR 66140, November 19, 2021).

3. What key comments did we receive and what are our responses?

Comment: One commenter suggested that the EPA minimize the requirements for electronic reporting to the extent possible, allow flexibility in the format, and allow hard copy reporting as needed to reduce the burden on small businesses.

Another commenter argued that the data obtained through electronic reporting will be highly incomplete due to the lack of internet access among small businesses and because of how complicated CEDRI is. The commenter claimed that making electronic reporting a requirement would create high rates of noncompliance with no real benefit to the environment.

Response: The EPA recognizes that there will be a slight burden to gain initial familiarity with the CEDRI system. However, after the initial process, the EPA believes electronic reporting will lessen burden for all involved parties. The EPA does allow flexibility in the format of the reports, and there is no template or prescriptive data entry process unlike for many other rules. The required documents, each of which involves fairly minimal information requirements, may be submitted in a standard PDF format. Allowing hard copy reporting would reduce the effectiveness of this program, as the intent is to create an electronic record that lessens the burden on all involved, and a hybrid mixture of new documents in both electronic and paper formats would be unwieldy.

Comment: One commenter stated that the small business community lacks the resources that larger businesses have to accomplish electronic reporting and that many shops do not have internet access or computers. According to the commenter, many shops that would regularly utilize internet access at public libraries have not been able to do so during the COVID–19 pandemic.

Response: It is the EPA's position that internet access is easily obtained, and temporary disruptions due to a pandemic are not indicative of, or used to determine, standards that would typically apply.

4. What is the rationale for our final approach for the electronic reporting provisions?

For the reasons explained in the preamble to the proposed rules (86 FR 66130, November 19, 2021), and in the comment responses above in section IV.B.3 of this preamble, we are finalizing the electronic reporting provisions for 40 CFR part 63, subpart HHHHHH, as proposed.

C. SSM Provisions

1. What did we propose?

In the November 19, 2021, action, we proposed amendments to the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP to remove and revise provisions related to SSM that are not consistent with the statutory requirement that the standards apply at all times. More information concerning the elimination of SSM provisions is in the preamble to the proposed rule (86 FR 66141).

2. What changed since proposal?

We are finalizing the SSM provisions as proposed with no changes (86 FR 66130, November 19, 2021).

3. What key comments did we receive and what are our responses?

No comments were received on our proposed changes to the SSM provisions.

4. What is the rationale for our final approach for the SSM provisions?

For the reasons explained in the preamble to the proposed rule (86 FR 66130, November 19, 2021), we are finalizing the SSM provisions for 40 CFR part 63, subpart HHHHHH, as proposed.

D. Petition for Exemption

1. What did we propose?

In the November 19, 2021, action, we proposed a simplified petition for exemption process for motor vehicle or mobile equipment surface coating operations that do not spray-apply any coatings that contain the target HAP. More information concerning the simplified petition for exemption process is in the preamble to the proposed rules (86 FR 66141).

2. What changed since proposal?

We are finalizing the simplified alternative to the petition for exemption process as proposed with no changes (86 FR 66130, November 19, 2021).

3. What key comments did we receive and what are our responses?

We received three comments concerning the petition for exemption process for motor vehicle or mobile equipment surface coating operations.

Comment: One commenter urged the EPA to delete the petition for exemption process for motor vehicle or mobile equipment surface coating operations. The commenter asserted that the EPA is incorrect in its conclusion that autobody shops are often unaware of the HAP content of the coatings they apply. The commenter stated that manufacturers provide information to their customers such that automotive refinishing operations know the HAP composition of the products that they use. In addition, many automotive refinishing operations have state and local air permits that require the disclosure of a considerable amount of information on these operations and their emissions. The commenter argued that automatically subjecting automotive refinishing operations to the rule also places an excessive burden on the smallest of the sources affected by the rule. For consistency and to reduce burden (especially for small business operations), the commenter recommended that the EPA revise the rule so that miscellaneous metal parts, plastic parts, and automotive refinishing operations are not subject to the rule unless they use coatings containing the target HAPs of concern.

Response: The EPA notes that sources that perform surface coating of miscellaneous metal parts and plastic parts are only subject to the NESHAP standards if they spray-apply target HAP-containing coatings. That is because it is easier for them (and the EPA/delegated authorities) to know and track the HAP content of these coatings. In contrast, because automotive refinishing operations are relatively numerous, as well as less consistent in facility operation and in the coatings that they may purchase or use at any given time, the EPA has concerns that changing the general applicability would make it even more difficult to support compliance with the standards.

In addition, the target HAP that are the subject of this rule are not a priority for state and local air agencies, except for a few cases—such as California's 2001 ban on cadmium and chromium—and are not addressed in or limited by

state and local air quality permits. Therefore, the information that is collected from automotive refinishers under this rule would not otherwise be readily available. The EPA has, however, reduced the burden on automotive refinishing facilities by allowing them to submit a notification to the EPA that they are not subject rather than having to petition the EPA for a determination that they are not subject.

The EPA's assessment in the original 2008 rule was that most sources were already in compliance with these standards and that, for those that were not, achieving compliance would not be overly burdensome. Because target HAP-free coatings have become even more available in recent years, achieving compliance is arguably even less burdensome than before the rule.

Comment: One commenter argued that the requirement that autobody shops must file a petition to have EPA approve their exempt status singles them out from all other businesses that spray paint on metal and plastic substrates. The commenter stated that the requirement to file a petition for exemption adds a substantial burden on these very small businesses that others do not have. Due to the extra burden of filing a petition, the commenter said that it is likely that tens of thousands of shops are out of compliance with a rule when they technically should not be subject to it at all.

Response: The EPA maintains that autobody shops operate differently from the other miscellaneous surface coating operations and that distinguishing them is merited due to these differences. However, we have no evidence that the burden of electronically submitting a PDF is onerous, and we note that there is a benefit for all involved parties to have readily accessible documentation of basic facts about subject sources and their compliance with the NESHAP requirements. The commenter's claim that the burden of filing a petition for exemption is a cause of source noncompliance is unsubstantiated. In fact, the EPA's proposed simplified alternative to the petition for exemption process reduces possible burden.

Comment: One commenter recommended that if the EPA chooses to retain the petition for exemption requirements on autobody shops, it is essential to fix 40 CFR 63.11170(a)(2) to exempt shops from only the coatings portion of the subpart and not the paint stripping portion. Likewise, the commenter urged the EPA to clarify that using MeCl stripper does not preclude a shop from petitioning for exemption from the coatings portion. Finally, the commenter requested that the EPA clarify that a petition for exemption does not require that an initial notification be filed at the same time since a granted petition obviates the need for an initial notification.

Response: The EPA maintains it is already clear that the exemption only applies to activities under 40 CFR 63.11170(a)(2), and that is made explicit in the example petition for exemption document that can be found on the EPA's Collision Repair Campaign Documents web page (*https://www.epa.gov/collision-repair-campaign/collision-repair-campaign-documents*). However, to improve clarity, the EPA is revising the second sentence of 40 CFR 63.11170(a)(2) such that the rule language no longer refers to "an exemption from this subpart," and instead refers to "an exemption from the surface coating provisions of this subpart." The NESHAP does require that each facility provide an initial notification, to include information specified in 40 CFR 63.11175(a), regardless of whether or when the facility chooses to additionally submit a petition for exemption, or the simplified alternative notification that they do not spray-apply coating containing the target HAP.

4. What is the rationale for our final approach for the simplified alternative to the petition for exemption?

For the reasons explained in the preamble to the proposed rules (86 FR 66130, November 19, 2021), and in the comment responses above in section IV.D.3 of this preamble, we are finalizing the provisions for a simplified alternative to the petition for exemption process for 40 CFR part 63, subpart HHHHHH, as proposed.

V. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted

A. What are the affected facilities?

Currently, we estimate 39,812 area source facilities are subject to the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP and operating in the United States. The affected source under the NESHAP is the collection of any and all of the items listed in (1) through (6) of this section V.A of the preamble. Not all affected sources will have all of the items listed in (1) through (6) of this section V.A of the preamble.

(1) Mixing rooms and equipment;

(2) Spray booths, ventilated prep stations, curing ovens, and associated equipment;

(3) Spray guns and associated equipment;

(4) Spray gun cleaning equipment;

(5) Equipment used for storage, handling, recovery, or recycling of cleaning solvent or waste paint; and

(6) Equipment used for paint stripping at paint stripping facilities using paint strippers containing MeCl.

B. What are the air quality impacts?

Estimated emissions of target HAP and MeCl from the facilities in the Paint Stripping and Surface Coating source categories are not expected to change in any significant way due to this review or its associated amendments to the NESHAP.

These amendments acknowledge that all area sources in the source categories must comply with the relevant emission standards at all times, including periods of SSM. We were unable to quantify the emissions that occur during periods of SSM or the specific emissions reductions that will occur as a result of this action. However, eliminating the SSM exemption has the potential to reduce emissions by requiring facilities to meet the applicable standard during SSM periods.

Indirect or secondary air emissions impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (*e.g.,* increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment. These amendments would have no effect on the energy needs of the affected paint stripping and surface coating facilities and would, therefore, have no indirect or secondary air emissions impacts.

C. What are the cost impacts?

We estimate that each facility in the source categories will experience one-time costs of approximately $400. These costs are a combination of the estimated reporting and recordkeeping costs (2 technical hours), and the time to read and understand the rule amendments (2 technical hours).[1] Costs associated with adoption of electronic reporting were estimated as part of the reporting and recordkeeping costs and include time for sources to familiarize themselves with electronic record systems.

For further information on the potential costs, see the memorandum titled *Proposal Economic Impact Analysis for the National Emissions*

[1] The labor costs were calculated using the applicable labor rates from the latest version of the Bureau of Labor Statistics (BLS) survey titled National Occupational Employment and Wage Estimates United States located at: *https://www.bls.gov/oes/current/oes_nat.htm#00-0000.*

Standards of Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, available in the docket for this action.

D. What are the economic impacts?

The economic impact analysis is designed to inform decision makers about the potential economic consequences of the compliance costs outlined in section V.C. of this preamble. To assess the maximum potential impact, the largest cost expected to be experienced in any one year is compared to the total sales for the ultimate owner of the affected facilities to estimate the total burden for each facility.

For the final revisions to the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP, the total cost is estimated to be approximately $400 per facility in the first year of the rule. These costs are not expected to result in a significant market impact, regardless of whether they are passed on to the purchaser or absorbed by the firms.

The EPA also prepared a small business screening assessment to determine whether any of the identified affected entities are small entities, as defined by the U.S. Small Business Administration. Of the facilities potentially affected by the final revisions to the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources NESHAP, we estimate that the vast majority are small entities. However, the annualized costs associated with the final requirement is from 0.0 to 0.2 percent of annual sales revenue for the ultimate owner of those facilities, well below the 1 percent threshold. Therefore, there are no significant economic impacts on a substantial number of small entities from these amendments.

E. What are the benefits?

As stated in section V.B. of the November 19, 2021, proposal preamble (86 FR 66130), we were unable to quantify the specific emissions reductions associated with eliminating the SSM exemption, although this change has the potential to reduce emissions of the target HAP and MeCl.

Because these amendments are not considered economically significant, as defined by Executive Order 12866, we did not monetize the benefits of reducing these emissions. This does not mean that there are no benefits associated with the potential reduction in target HAP and MeCl from this rule.

F. What analysis of environmental justice did we conduct?

Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms; specifically, minority populations, low-income populations, and indigenous peoples (59 FR 7629, February 16, 1994). Additionally, Executive Order 13985 was signed to advance racial equity and support underserved communities through Federal government actions (86 FR 7009, January 20, 2021). The EPA defines environmental justice (EJ) as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The EPA further defines the term fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies'' (*https://www.epa.gov/environmentaljustice).* In recognizing that minority and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution. To examine the potential for any EJ issues that might be associated with the source categories, we performed a demographic analysis, which is an assessment of individual demographic groups of the populations living within 5 kilometers (km) and within 50 km of the facilities. The EPA then compared the data from this analysis to the national average for the demographic indicators.

In the analysis, we evaluated the proximity of minority and low-income groups within the populations that live near facilities. Data limitations preclude a complete analysis. This NESHAP applies to sources in many different industries, often operating as small facilities, and limited location data of subject facilities was available. As described in the technology review memorandum, available in the docket for this action, and section II.C of this preamble, we did conduct searches for available information. However, the results do not account for emission or risk impacts from sources and may not be fully representative of the full distribution of facilities across all locations and populations. This analysis is intended to function as a guide to possible proximity disparities.

Based upon the number of facilities in this analysis and their proximity to urban centers, the category minority demographics are higher than the national average while individual facilities for a large number of sites will significantly exceed the national average demographics for every group due to being in urban locations. The results of the demographic analysis for populations within 5 km of the facilities within the source categories indicate that the minority population (being the total population minus the white population) is higher when compared to the national percentage (49 percent versus 40 percent). These comparisons also hold true for other demographic groups (African American, Other and Multiracial Groups, Hispanics, and people living in linguistic isolation). The African American demographic group shows the highest difference when compared to the national average (17 percent vs 12 percent). The remaining demographics identified above were above the national average by 2 percent. The methodology and the results of the demographic analysis are presented in a technical report, *Technology Review— Analysis of Demographic Factors for Populations Living Near the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources Source Categories,* available in this docket for this action. While demographic analysis shows some population categories that are above the national average, this action is not likely to change levels of emissions near facilities. Based on our technology review, we did not identify any add-on control technologies, process equipment, work practices or procedures that were not previously considered during development of the 2008 Paint Stripping and Miscellaneous Surface Coating at Area Sources NESHAP, and we did not identify developments in practices, processes, or control technologies that would result in additional emission reductions.

G. What analysis of children's environmental health did we conduct?

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

The information collection activities in this final rule have been submitted for approval to OMB under the PRA.

The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2268.08. You can find a copy of the ICR in the docket for this action (Docket ID No. EPA–HQ–OAR–2021–0016), and it is briefly summarized here.

As part of the technology review for the NESHAP, the EPA is not revising the emission limit requirements. The EPA is revising the SSM provisions that previously applied to the NESHAP and is proposing the use of electronic data reporting for future notifications and reports. This information is being collected to assure compliance with 40 CFR part 63, subpart HHHHHH.

Respondents/affected entities: Facilities performing paint stripping and surface coating operations at area sources.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart HHHHHH).

Estimated number of respondents: In the 3 years after the final rulemaking, 38,194 respondents per year would be subject to the NESHAP and no additional respondents are expected to become subject to the NESHAP during that period.

Frequency of response: The total number of responses in year 1 is 76,388. Years 2 and 3 would have no responses.

Total estimated burden: The average annual burden to the paint stripping and surface coating operations at area source facilities over the 3 years is estimated to be 43,900 hours (per year). The average annual burden to the Agency over the 3 years is estimated to be 0 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The average annual cost to the facilities is $5,200,000 in labor costs for the first 3 years. The average annual capital and operation and maintenance (O&M) cost savings is $27,100, because photocopying and postage will no longer be necessary in submitting notifications and reports. The total average annual Agency cost over the first 3 years is estimated to be $0.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The economic impact associated with the proposed requirements in this action for the affected small entities is described in section V.D. above.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. No tribal facilities are known to be engaged in any of the industries that would be affected by this action. Thus, Executive Order 13175 does not apply to this action. Nevertheless, consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, EPA sent out consultation letters to 574 federally recognized tribes offering tribal officials the opportunity to meaningfully engage on a government-to-government basis. We did not receive any requests for consultation. In addition, on June 24, 2021, EPA provided an overview of the proposed action on the monthly National Tribal Air Association (NTAA) air policy call to provide tribal environmental professionals an opportunity to ask questions.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

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

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

This rulemaking involves technical standards. We are amending the Paint Stripping and Miscellaneous Surface Coating Operations at Area Source NESHAP in this action to update references to ASHRAE Method 52.1, ''Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter, June 4, 1992,'' with ANSI/ASHRAE Standard 52.2–2017 ''Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size.'' Both methods measure paint booth filter efficiency to measure the capture efficiency of paint overspray arrestors with spray-applied coatings. The EPA is also amending the NESHAP to include EPA Method 319—Determination of Filtration Efficiency for Paint Overspray Arrestors (Appendix A to 40 CFR part 63), as an alternative to ANSI/ASHRAE Standard 52.2–2017.

The ANSI/ASHRAE standard is available from the American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1791 Tullie Circle NE, Atlanta, GA 30329. See *https://www.ashrae.org.*

Under 40 CFR 63.7(f) and 40 CFR 63.8(f) of subpart A of the General Provisions, a source may apply to the EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures in the final rule or any amendments.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The methodology and the results of the demographic analysis are presented in a technical report, *Technology Review — Analysis of Demographic Factors for Populations Living Near the Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources Source Categories,* available in this docket for this action.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Appendix A, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Michael S. Regan,

Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency is amending part 63 of title 40, chapter I, of the Code of Federal Regulations 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.*

Subpart A—General Provisions

■ 2. Section 63.14 is amended by:
■ a. Revising paragraph (d)(1); and
■ b. Adding paragraph (d)(2).

The revision and addition read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(d) * * *

(1) American Society of Heating, Refrigerating, and Air-Conditioning Engineers Method 52.1, *Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter* June 4, 1992; IBR approved for § 63.11516(d).

(2) ANSI/ASHRAE Standard 52.2–2017, *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size,* copyright 2017; IBR approved for § 63.11173(e).

* * * * *

Subpart HHHHHH—National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

■ 3. Amend § 63.11170 by revising paragraph (a)(2) to read as follows:

§ 63.11170 Am I subject to this subpart?

(a) * * *

(2) Perform spray application of coatings, as defined in § 63.11180, to motor vehicles and mobile equipment including operations that are located in stationary structures at fixed locations, and mobile repair and refinishing operations that travel to the customer's location, except spray coating applications that meet the definition of facility maintenance in § 63.11180. However, if you are the owner or operator of a motor vehicle or mobile equipment surface coating operation, you may petition the Administrator for an exemption from the surface coating provisions of this subpart if you can demonstrate, to the satisfaction of the Administrator, that you spray apply no coatings that contain the target HAP, as defined in § 63.11180. Petitions must include a description of the coatings that you spray apply and your certification that you do not spray apply any coatings containing the target HAP. If circumstances change such that you intend to spray apply coatings containing the target HAP, you must submit the initial notification required by § 63.11175 and comply with the requirements of this subpart. On and after May 9, 2023, you may submit a notification to the Administrator that you do not spray apply any target HAP containing coatings, as defined in § 63.11180, in place of a petition. You are still required to retain records that describe the coatings that are spray applied, but that information does not need to be reported to the Administrator. The Administrator maintains the authority to verify records retained on site, including whether the notification of exemption was sufficiently demonstrated. Alternatively, if you are the owner or operator of a motor vehicle or mobile equipment surface coating operation and you wish for a formal determination, you may still petition the Administrator for an exemption from this subpart.

* * * * *

■ 4. Amend § 63.11173 by revising paragraph (e)(2)(i) and adding paragraph (h) to read as follows:

§ 63.11173 What are my general requirements for complying with this subpart?

* * * * *

(e) * * *

(2) * * *

(i) All spray booths, preparation stations, and mobile enclosures must be fitted with a type of filter technology that is demonstrated to achieve at least 98 percent capture of paint overspray. The procedure used to demonstrate filter efficiency must be consistent with the ANSI/ASHRAE Standard 52.2–2017 (incorporated by reference, see § 63.14). The filter efficiency shall be based on the difference between the quantity of dust injected and the quantity captured on the final filter with no test device in place. The filter will be challenged with 100 grams of loading dust and the final filter weight will be to the nearest 0.1 gram. EPA Method 319 of Appendix A to 40 CFR part 63 may be used as an alternative to ANSI/ASHRAE Standard 52.2–2017. Owners and operators may use published filter efficiency data provided by filter vendors to demonstrate compliance with this requirement and are not required to perform this measurement. The requirements of this paragraph do not apply to water wash spray booths that are operated and maintained according to the manufacturer's specifications.

* * * * *

(h) You must be in compliance with the requirements in this subpart at all times. At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

■ 5. Amend § 63.11175 by adding paragraph (c) to read as follows:

§ 63.11175 What notifications must I submit?

* * * * *

(c) On and after May 9, 2023, the owner or operator shall submit the initial notifications required in § 63.9(b) and paragraph (a) of this section and the notification of compliance status required in § 63.9(h) and paragraph (b) of this section to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI) (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov*)). The owner or operator must upload to CEDRI an electronic copy of each applicable notification in portable document format (PDF). The applicable notification must be submitted by the deadline specified in this subpart, regardless of the method in which the reports are submitted. Owners or operators who claim that some of the information required to be submitted via CEDRI is confidential business information (CBI) shall submit a complete notification, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage medium to the EPA. The electronic medium shall be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Paint Stripping and Miscellaneous Surface Coating Operations Sector Lead, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted shall be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

■ 6. Amend § 63.11176 by adding paragraphs (c) through (e) to read as follows:

§ 63.11176 What reports must I submit?

* * * * *

(c) On and after May 9, 2023, the owner or operator shall submit the Annual Notification of Changes Report required in paragraph (a) of this section and the MeCl report required in paragraph (b) of this section to the EPA via CEDRI (CEDRI can be accessed through the EPA's CDX (*https://cdx.epa.gov*)). The owner or operator must upload to CEDRI an electronic copy of each applicable report in PDF. The applicable report must be submitted by the deadline specified in this subpart, regardless of the method in which the reports are submitted. Owners or operators who claim that some of the information required to be submitted via CEDRI is CBI shall submit a complete report, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage medium to the EPA. The electronic medium shall be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Paint Stripping and Miscellaneous Surface Coating Operations Sector Lead, MD C404–02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted shall be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(d) If you are required to electronically submit a report through the CEDRI in the EPA's CDX, and due to a planned or actual outage of either the EPA's CEDRI or CDX systems within the period of time beginning 5 business days prior to the date that the submission is due, you will be or are precluded from accessing CEDRI or CDX and submitting a required report within the time prescribed, you may assert a claim of EPA system outage for failure to timely comply with the reporting requirement. You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or caused a delay in reporting. You must provide to the Administrator a written description identifying the date, time and length of the outage; provide to the Administrator a rationale for attributing the delay in reporting beyond the regulatory deadline to the EPA system outage; describe the measures taken or to be taken to minimize the delay in reporting; and identify a date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported. In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved. The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(e) If you are required to electronically submit a report through CEDRI in the EPA's CDX and a *force majeure* event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning 5 business days prior to the date the submission is due, the owner or operator may assert a claim of *force majeure* for failure to timely comply with the reporting requirement. For the purposes of this section, a *force majeure* event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (*e.g.,* hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (*e.g.,* large scale power outage). If you intend to assert a claim of *force majeure,* you must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or caused a delay in reporting. You must provide to the Administrator a written description of the *force majeure* event and a rationale for attributing the delay in reporting beyond the regulatory deadline to the *force majeure* event; describe the measures taken or to be taken to minimize the delay in reporting; and identify a date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported. In any circumstance, the reporting must occur as soon as possible after the *force majeure* event occurs. The decision to accept the claim of *force majeure* and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

■ 7. Amend § 63.11180 by:

■ a. Revising the definition of *''Materials that contain HAP* or *HAP-containing materials'';*

■ b. Removing the definition of *''Non-HAP solvent'';* and

■ c. Revising the definitions of *''Spray-applied coating operations''* and *''Target HAP containing coating''.*

The revisions read as follows:

§ 63.11180 What definitions do I need to know?

* * * * *

Materials that contain HAP or *HAP-containing materials* mean, for the purposes of this subpart, materials that contain any individual target HAP that is a carcinogen at a concentration greater than 0.1 percent by mass, or greater than 1.0 percent by mass for any other individual target HAP.

* * * * *

Spray-applied coating operations means coatings that are applied using a hand-held device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of this subpart, spray-applied coatings do not include the following materials or activities:

(1) Coatings applied from a hand-held device with a paint cup capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters) for devices that do not use a paint cup liner, or with a paint cup liner capacity that is equal to or less than 3.0 fluid ounces (89 cubic centimeters) for devices that use a paint cup liner. Repeatedly refilling and reusing a 3.0 fluid ounce cup or cup liner or using multiple 3.0 fluid ounce cup liners to complete a single spray applied coating operation as a means of avoiding rule applicability will be considered an attempt to circumvent the requirements of this subpart.

(2) Surface coating application using powder coating, hand-held, non-refillable aerosol containers, or non-atomizing application technology, including, but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, or marking pens.

(3) Thermal spray operations (also known as metallizing, flame spray, plasma arc spray, and electric arc spray, among other names) in which solid metallic or non-metallic material is heated to a molten or semi-molten state and propelled to the work piece or substrate by compressed air or other gas, where a bond is produced upon impact.

* * * * *

Target HAP containing coating means a spray-applied coating that contains any individual target HAP that is a carcinogen at a concentration greater than 0.1 percent by mass, or greater than 1.0 percent by mass for any other individual target HAP compound. For the target HAP, this corresponds to coatings that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by mass (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by mass (of the metal). For the purpose of determining whether materials you use contain the target HAP compounds, you may rely on formulation data provided by the manufacturer or supplier, such as the material safety data sheet (MSDS), as long as it represents each target HAP compound in the material that is present at 0.1 percent by mass or more for carcinogens and at 1.0 percent by mass or more for other target HAP compounds. The target HAP content of coatings is based on the HAP content of the coating as applied, not on the HAP content of the coating components as purchased from the coating supplier. However, coatings that do not contain the target HAP based on the HAP content as purchased will also meet the definition based on the HAP content as applied.

* * * * *

■ 8. Revise table 1 to subpart HHHHHH to read as follows:

TABLE 1 TO SUBPART HHHHHH OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART HHHHHH OF PART 63

Citation	Subject	Applicable to subpart HHHHHH	Explanation
§ 63.1(a)(1)–(12)	General Applicability	Yes.	
§ 63.1(b)(1)–(3)	Initial Applicability Determination	Yes	Applicability of subpart HHHHHH is also specified in § 63.11170.
§ 63.1(c)(1)	Applicability After Standard Established	Yes.	
§ 63.1(c)(2)	Applicability of Permit Program for Area Sources.	Yes	§ 63.11174(b) of subpart HHHHHH exempts area sources from the obligation to obtain Title V operating permits.
§ 63.1(c)(5)	Notifications	Yes.	
§ 63.1(e)	Applicability of Permit Program to Major Sources Before Relevant Standard is Set.	No	§ 63.11174(b) of subpart HHHHHH exempts area sources from the obligation to obtain Title V operating permits.
§ 63.2	Definitions	Yes	Additional definitions are specified in § 63.11180.
§ 63.3(a)–(c)	Units and Abbreviations	Yes.	
§ 63.4(a)(1)–(5)	Prohibited Activities	Yes.	
§ 63.4(b)–(c)	Circumvention/Fragmentation	Yes.	
§ 63.5	Construction/Reconstruction of major sources.	No	Subpart HHHHHH applies only to area sources.
§ 63.6(a)	Compliance With Standards and Maintenance Requirements—Applicability.	Yes.	
§ 63.6(b)(1)–(7)	Compliance Dates for New and Reconstructed Sources.	Yes	§ 63.11172 specifies the compliance dates.
§ 63.6(c)(1)–(5)	Compliance Dates for Existing Sources	Yes	§ 63.11172 specifies the compliance dates.
§ 63.6(e)(1)–(2)	Operation and Maintenance Requirements.	No	See § 63.11173(h) for general duty requirement.
§ 63.6(e)(3)	Startup, Shutdown, and Malfunction Plan.	No	No startup, shutdown, and malfunction plan is required by subpart HHHHHH.
§ 63.6(f)(1)	Compliance with Nonopacity Emission Standards—Applicability.	No..	
§ 63.6(f)(2)–(3)	Methods for Determining Compliance	Yes.	
§ 63.6(g)(1)–(3)	Use of an Alternative Standard	Yes.	
§ 63.6(h)	Compliance With Opacity/Visible Emission Standards.	No	Subpart HHHHHH does not establish opacity or visible emission standards.
§ 63.6(i)(1)–(16)	Extension of Compliance	Yes.	
§ 63.6(j)	Presidential Compliance Exemption	Yes.	
§ 63.7	Performance Testing Requirements	No	No performance testing is required by subpart HHHHHH.

TABLE 1 TO SUBPART HHHHHH OF PART 63—APPLICABILITY OF GENERAL PROVISIONS—Continued
TO SUBPART HHHHHH OF PART 63

Citation	Subject	Applicable to subpart HHHHHH	Explanation
§ 63.8	Monitoring Requirements	No	Subpart HHHHHH does not require the use of continuous monitoring systems.
§ 63.9(a)–(d)	Notification Requirements	Yes	§ 63.11175 specifies notification requirements.
§ 63.9(e)	Notification of Performance Test	No	Subpart HHHHHH does not require performance tests.
§ 63.9(f)	Notification of Visible Emissions/Opacity Test.	No	Subpart HHHHHH does not have opacity or visible emission standards.
§ 63.9(g)	Additional Notifications When Using CMS.	No	Subpart HHHHHH does not require the use of continuous monitoring systems.
§ 63.9(h)	Notification of Compliance Status	No	§ 63.11175 specifies the dates and required content for submitting the notification of compliance status.
§ 63.9(i)	Adjustment of Submittal Deadlines	Yes.	
§ 63.9(j)	Change in Previous Information	Yes	§ 63.11176(a) specifies the dates for submitting the notification of changes report.
§ 63.9(k)	Electronic reporting procedures	Yes	Only as specified in § 63.9(j).
§ 63.10(a)	Recordkeeping/Reporting—Applicability and General Information.	Yes.	
§ 63.10(b)(1)	General Recordkeeping Requirements	Yes	Additional requirements are specified in § 63.11177.
§ 63.10(b)(2)(i)–(xi)	Recordkeeping Relevant to Startup, Shutdown, and Malfunction Periods and CMS.	No	Subpart HHHHHH does not require startup, shutdown, and malfunction plans, or CMS.
§ 63.10(b)(2)(xii)	Waiver of recordkeeping requirements	Yes.	
§ 63.10(b)(2)(xiii)	Alternatives to the relative accuracy test	No	Subpart HHHHHH does not require the use of CEMS.
§ 63.10(b)(2)(xiv)	Records supporting notifications	Yes.	
§ 63.10(b)(3)	Recordkeeping Requirements for Applicability Determinations.	Yes.	
§ 63.10(c)	Additional Recordkeeping Requirements for Sources with CMS.	No	Subpart HHHHHH does not require the use of CMS.
§ 63.10(d)(1)	General Reporting Requirements	Yes	Additional requirements are specified in § 63.11176.
§ 63.10(d)(2)–(3)	Report of Performance Test Results, and Opacity or Visible Emissions Observations.	No	Subpart HHHHHH does not require performance tests, or opacity or visible emissions observations.
§ 63.10(d)(4)	Progress Reports for Sources With Compliance Extensions.	Yes.	
§ 63.10(d)(5)	Startup, Shutdown, and Malfunction Reports.	No	Subpart HHHHHH does not require startup, shutdown, and malfunction reports.
§ 63.10(e)	Additional Reporting requirements for Sources with CMS.	No	Subpart HHHHHH does not require the use of CMS.
§ 63.10(f)	Recordkeeping/Reporting Waiver	Yes.	
§ 63.11	Control Device Requirements/Flares	No	Subpart HHHHHH does not require the use of flares.
§ 63.12	State Authority and Delegations	Yes.	
§ 63.13	Addresses of State Air Pollution Control Agencies and EPA Regional Offices.	Yes.	
§ 63.14	Incorporation by Reference	Yes	Test methods for measuring paint booth filter efficiency and spray gun transfer efficiency in § 63.11173(e)(2) and (3) are incorporated and included in § 63.14.
§ 63.15	Availability of Information/Confidentiality	Yes.	
§ 63.16(a)	Performance Track Provisions—reduced reporting.	Yes.	
§ 63.16(b)–(c)	Performance Track Provisions—reduced reporting.	No	Subpart HHHHHH does not establish numerical emission limits.

[FR Doc. 2022–24129 Filed 11–9–22; 8:45 am]

BILLING CODE 6560–50–P

Rules and Regulations

Federal Register
Vol. 87, No. 153
Wednesday, August 10, 2022

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 60 and 63

[EPA–HQ–OAR–2008–0708; FRL–5300.3–01–OAR]

RIN 2060–AV76

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines; Court Vacatur

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is amending the Code of Federal Regulations (CFR) to reflect a 2015 court decision regarding the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) and the New Source Performance Standards (NSPS) for Stationary Internal Combustion Engines (ICE). The court vacated provisions in the regulations specifying that emergency engines could operate for emergency demand response or during periods where there is a deviation of voltage or frequency. This ministerial rule revises the RICE NESHAP and ICE NSPS to conform to the court's decision.

DATES: This final rule is effective on August 10, 2022.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2008–0708. All documents in the docket are listed in *https://www.regulations.gov/*. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. With the exception of such material, publicly available docket materials are available electronically in *https://www.regulations.gov/* or in hard copy at the EPA Docket Center, Room 3334, WJC West Building, 1301 Constitution Avenue NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742. For further information and updates on EPA Docket Center services and current status, please visit us online at *https://www.epa.gov/dockets/*.

FOR FURTHER INFORMATION CONTACT: For questions about this action, contact Melanie King, Sector Policies and Programs Division (D243–01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2469; and email address: *king.melanie@epa.gov*.

SUPPLEMENTARY INFORMATION:

Organization of this document. The information in this preamble is organized as follows:

I. Why is the EPA issuing this final rule?
II. Background
III. Which provisions are being amended?
IV. Statutory and Executive Order Reviews
A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
B. Paperwork Reduction Act (PRA)
C. Regulatory Flexibility Act (RFA)
D. Unfunded Mandates Reform Act (UMRA)
E. Executive Order 13132: Federalism
F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer and Advancement Act (NTTAA)
J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
K. Congressional Review Act (CRA)

I. Why is the EPA issuing this final rule?

This action amends the CFR to reflect the 2015 court decision in *Delaware Department of Natural Resources and Environmental Control* v. *EPA,* 785 F.3d 1 (D.C. Cir. 2015) as amended (July 21, 2015), vacating 40 CFR 60.4211(f)(2)(ii) and (iii), 60.4243(d)(2)(ii) and (iii), and 63.6640(f)(2)(ii) and (iii). Section 553 of the Administrative Procedure Act, 5 U.S.C. 553(b)(3)(B) provides that, when an agency for good cause finds that notice and public procedures are impracticable, unnecessary, or contrary to the public interest, the agency may issue a rule without providing notice and an opportunity for public comment. The EPA has determined that there is good cause for amending these provisions without prior proposal and opportunity for public procedures because the correction of the CFR is a ministerial act to effectuate the court order and public notice and comment is unnecessary and would serve no useful purpose. Removal of the vacated paragraphs in the RICE NESHAP (40 CFR part 63 subpart ZZZZ) at 63.6640(f)(2)(ii) and (iii), the Compression Ignition (CI) ICE NSPS (40 CFR part 60 subpart IIII) at 40 CFR 60.4211(f)(2)(ii) and (iii), and the Spark Ignition (SI) ICE NSPS (40 CFR part 60 subpart JJJJ) at 60.4243(d)(2)(ii) and (iii) has no legal effect beyond fulfilling the court's vacatur in *Delaware* v. *EPA* and is ministerial in nature. The court issued the mandate for its decision on May 4, 2016, at which point the vacatur became effective.

II. Background

The RICE NESHAP and ICE NSPS include a subcategory for emergency engines and specify that to be classified as an emergency engine, an engine must meet certain limitations on its hours of operation in non-emergency situations. The existing regulations provide that hours of operation in non-emergency situations are limited to 100 hours per year and only allowed for specific purposes. On January 30, 2013, the EPA finalized amendments to the RICE NESHAP and ICE NSPS specifying that the non-emergency situations in which emergency engines could be operated included (1) for emergency demand response during periods in which the Reliability Coordinator under the North American Electric Reliability

Corporation (NERC) Reliability Standard EOP–002–3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP–002–3 and (2) periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. 78 FR 6674, January 30, 2013. The state of Delaware and other industry and environmental groups filed petitions seeking judicial review of the provisions specifying that emergency engines could operate for emergency demand response and during voltage or frequency deviations. In response to these petitions, the U.S. Court of Appeals for the District of Columbia Circuit vacated those provisions in the RICE NESHAP and ICE NSPS in 2015. The court held that the EPA acted arbitrarily and capriciously when it modified the RICE NESHAP and ICE NSPS to specify that emergency engines could operate for up to 100 hours per year for emergency demand response. The court granted the EPA's motion to stay issuance of its mandate until May 2016 to allow engine owners to take the necessary measures to bring their engines into compliance with the regulations. Upon issuance of the court's mandate, the vacated provisions ceased to have any legal effect, and engines that were operating for any number of hours per year for the circumstances described in the vacated provisions were required to cease operation under such circumstances or comply with the emission standards and other applicable requirements for non-emergency engines. The EPA issued a guidance memorandum explaining the effect of the vacatur [1] and is now amending the RICE NESHAP and ICE NSPS to reflect the court decision.

III. Which provisions are being amended?

This final rule amends the RICE NESHAP by removing paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii), the CI ICE NSPS by removing paragraphs 40 CFR 60.4211(f)(2)(ii) and (iii), and the SI ICE NSPS by removing paragraphs 40 CFR 60.4243(d)(2)(ii) and (iii), all of which were vacated by the *Delaware* v. *EPA* decision. The removal of the vacated paragraphs also necessitates revisions to other paragraphs in the ICE NSPS and RICE NESHAP that contained references to the vacated paragraphs or referenced operation of engines categorized as emergency engines for the purpose of emergency demand response, which can no longer occur due to the vacatur. A list of these revisions is provided below.

- *40 CFR 60.4211(f):* Remove "emergency demand response" from the paragraph (f) introductory text and the paragraph (f)(3) introductory text since operation for emergency demand response is no longer allowed for emergency engines; remove reference to the vacated paragraphs (f)(2)(ii) and (iii) from the paragraph (f)(2) introductory text.
- *40 CFR 60.4214(d):* Remove the reference in the paragraph (d) introductory text to operating for the purposes specified in the vacated paragraphs 40 CFR 60.4211(f)(2)(ii) and (iii); remove paragraphs (v) and (vi) which required reporting of operation and contractual obligation for the purposes specified in the vacated paragraphs.
- *40 CFR 60.4219:* Revise definition for "emergency stationary internal combustion engine" to remove reference to the vacated paragraphs 40 CFR 60.4211(f)(2)(ii) and (iii) in paragraph (3) of the definition.
- *40 CFR 60.4243(d):* Remove "emergency demand response" from the paragraph (d) introductory text and the paragraph (d)(3) introductory text since operation for emergency demand response is no longer allowed for emergency engines; remove reference to the vacated paragraphs (d)(2)(ii) and (iii) from the paragraph (d)(2) introductory text.
- *40 CFR 60.4245(e):* Remove the reference in the paragraph (e) introductory text to operating for the purposes specified in the vacated paragraphs 40 CFR 60.4243(d)(2)(ii) and (iii); remove paragraphs (v) and (vi) which required reporting of operation and contractual obligation for the purposes specified in the vacated paragraphs.
- *40 CFR 60.4248:* Revise definition for "emergency stationary internal combustion engine" to remove reference to the vacated paragraphs 40 CFR 60.4243(d)(2)(ii) and (iii) in paragraph (3) of the definition.
- *40 CFR 63.6585:* Remove reference to operation and contractual obligation for the purposes specified in the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii).
- *40 CFR 63.6590:* Remove references in paragraphs (b)(1)(i) and (b)(3)(iii) to operation and contractual obligation for the purposes specified in the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii).
- *40 CFR 63.6604:* Remove reference in paragraph (b) to operation and contractual obligation for the purposes specified in the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii); remove paragraph (c) since it only applied to an emergency engine that operates or is contractually obligated to be available for the purposes specified in the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii) and there would no longer be any emergency engines meeting that criteria since operation for those purposes is no longer allowed for emergency engines.
- *40 CFR 63.6640:* Remove "emergency demand response" from the paragraph (f) introductory text, the paragraph (f)(3) introductory text, and the paragraph (f)(4) introductory text since operation for emergency demand response is no longer allowed for emergency engines; remove reference to the vacated paragraphs (f)(2)(ii) and (iii) from the paragraph (f)(2) introductory text.
- *40 CFR 63.6650:* Remove the reference in the paragraph (h) introductory text to operating for the purposes specified in the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii); remove paragraphs (v) and (vi) which required reporting of operation and contractual obligation for the purposes specified in the vacated paragraphs.
- *40 CFR 63.6655:* Remove reference in paragraph (f) to the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii).
- *40 CFR 63.6675:* Revise definition for "emergency stationary RICE" to remove reference to the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii) in paragraph (3) of the definition.
- *Table 7 to subpart ZZZZ:* Remove reference in item 4 to operating for the purposes specified in the vacated paragraphs 40 CFR 63.6640(f)(2)(ii) and (iii).

As explained above, removal of these provisions corrects the CFR to conform to the court's decision in *Delaware* v. *EPA* and is ministerial in nature and neither imposes or removes any new requirements.

IV. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

[1] *Guidance on Vacatur of RICE NESHAP and NSPS Provisions for Emergency Engines.* Peter Tsirigotis, OAQPS to EPA Regional Air Enforcement Managers and Regional Air Directors. April 15, 2016. *https://www.epa.gov/sites/default/files/2016-06/documents/ricevacaturguidance041516.pdf.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, EPA concludes that the impact of concern for this rule is any significant adverse economic impact on small entities and that the agency is certifying that this rule will not have a significant economic impact on a substantial number of small entities because the rule has no net burden on the small entities subject to the rule. This action is ministerial in nature as it codifies a court-issued mandate vacating regulatory provisions. We have therefore concluded that this action will have no net regulatory burden for all directly regulated small entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have Tribal implications as specified in Executive Order 13175. This action presents no additional burden on implementing authorities beyond existing requirements. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard. This regulatory action is ministerial in nature as it codifies a court issued mandate vacating regulatory provisions and does not have any impact on human health or the environment.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. The CRA allows the issuing agency to make a rule effective sooner than otherwise provided by the CRA if the agency makes a good cause finding that notice and comment rulemaking procedures are impracticable, unnecessary, or contrary to the public interest (5 U.S.C. 808(2)). The EPA has made a good cause finding for this rule in section I of this preamble, including the basis for that finding.

List of Subjects

40 CFR Part 60

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

40 CFR Part 63

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

Michael S. Regan,

Administrator.

For the reasons set forth in the preamble, 40 CFR parts 60 and 63 are amended as follows:

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.* 42 U.S.C. 7401–7601.

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

■ 2. In § 60.4211:

■ a. Revise paragraphs (f) introductory text and (f)(2) introductory text;

■ b. Remove and reserve paragraphs (f)(2)(ii) and (iii); and

■ c. Revise paragraph (f)(3) introductory text.

The revisions read as follows:

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

* * * * *

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

* * * * *

(2) You may operate your emergency stationary ICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100

hours per calendar year allowed by this paragraph (f)(2).

* * * * *

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

* * * * *

■ 3. Section 60.4214 is amended by revising paragraph (d) introductory text and removing and reserving paragraphs (d)(1)(v) and (vi).

The revision reads as follows:

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

* * * * *

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates for the purpose specified in § 60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.

* * * * *

■ 4. Section 60.4219 is amended by revising the definition "Emergency stationary internal combustion engine" to read as follows:

§ 60.4219 What definitions apply to this subpart?

* * * * *

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4211(f)(3)(i).

* * * * *

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

■ 5. In § 60.4243:

■ a. Revise paragraphs (d) introductory text and (d)(2) introductory text;

■ b. Remove and reserve paragraphs (d)(2)(ii) and (iii); and

■ c. Revise paragraph (d)(3) introductory text.

The revisions read as follows:

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

* * * * *

(d) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (d)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (d)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (d)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

* * * * *

(2) You may operate your emergency stationary ICE for the purpose specified in paragraph (d)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (d)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (d)(2).

* * * * *

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (d)(2) of this section. Except as provided in paragraph (d)(3)(i) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

* * * * *

■ 6. Section 60.4245 is amended by revising paragraph (e) introductory text and removing and reserving paragraphs (e)(1)(v) and (vi).

The revision reads as follows:

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

* * * * *

(e) If you own or operate an emergency stationary SI ICE with a maximum engine power more than 100 HP that operates for the purpose specified in § 60.4243(d)(3)(i), you must submit an annual report according to the requirements in paragraphs (e)(1) through (3) of this section.

* * * * *

■ 7. Section 60.4248 is amended by revising the definition "Emergency stationary internal combustion engine" to read as follows:

§ 60.4248 What definitions apply to this subpart?

* * * * *

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4243(d) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4243(d), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is

interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4243(d).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4243(d)(3)(i).

* * * * *

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

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

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

Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

■ 9. Section 63.6585 is amended by revising paragraphs (f)(1) through (3) to read as follows:

§ 63.6585 Am I subject to this subpart?

* * * * *

(f) * * *

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

■ 10. Section 63.6590 is amended by revising paragraphs (b)(1)(i) and (b)(3)(iii) to read as follows:

§ 63.6590 What parts of my plant does this subpart cover?

* * * * *

(b) * * *

(1) * * *

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

* * * * *

(3) * * *

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

* * * * *

■ 11. Section 63.6604 is amended by revising paragraph (b) and removing and reserving paragraph (c).

The revision reads as follows:

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

* * * * *

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

* * * * *

■ 12. In § 63.6640:

■ a. Revise paragraphs (f) introductory text and (f)(2) introductory text;

■ c. Remove and reserve paragraphs (f)(2)(ii) and (iii); and

■ d. Revise paragraph (f)(3) and paragraph (f)(4) introductory text.

The revisions read as follows:

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

* * * * *

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

* * * * *

(2) You may operate your emergency stationary RICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

* * * * *

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

* * * * *

■ 13. Section 63.6650 is amended by revising paragraph (h) introductory text and removing and reserving paragraphs (h)(1)(v) and (vi).

The revision reads as follows:

§ 63.6650 What reports must I submit and when?

* * * * *

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

* * * * *

■ 14. Section 63.6655 is amended by revising paragraph (f) introductory text to read as follows:

§ 63.6655 What records must I keep?

* * * * *

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The

owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purpose specified in § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

* * * * *

■ 15. Section 63.6675 is amended by revising the definition "Emergency stationary RICE" to read as follows:

§ 63.6675 What definitions apply to this subpart?

* * * * *

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(4)(i) or (ii).

* * * * *

■ 16. Table 7 to subpart ZZZZ of part 63 is revised to read as follows:

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

As stated in § 63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP.	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in § 63.6650(b)(1)–(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)–(9) for engines that are limited use stationary RICE subject to numerical emission limitations.
		b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4)	i. Semiannually according to the requirements in § 63.6650(b).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year.	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in § 63.6650(b)(1)–(5).
4. Emergency stationary RICE that operate for the purposes specified in § 63.6640(f)(4)(ii).	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)–(3).

[FR Doc. 2022–17060 Filed 8–9–22; 8:45 am]

BILLING CODE 6560–50–P

SIP submission that complies with the provisions of the Act and applicable federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. Accordingly, this action merely approves state law as meeting federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104–4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
- The state did not evaluate environmental justice considerations as part of its SIP submittal. There is no information in the record inconsistent with the stated goals of E.O. 12898 of achieving environmental justice for people of color, low-income populations, and indigenous peoples.

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by February 21, 2023. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Ozone, Particulate matter, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: December 14, 2022.

Martha Guzman Aceves,

Regional Administrator, Region IX.

Part 52, Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

■ 1. The authority citation for Part 52 continues to read as follows:

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

Subpart F—California

■ 2. Section 52.220 is amended by adding paragraphs (c)(379)(i)(C)(*9*), (c)(472)(i)(C)(*2*), and (c)(565)(i)(A)(*3*), reserved paragraph (c)(591), and paragraph (c)(592) to read as follows:

§ 52.220 Identification of plan—in part.

* * * * *

(c) * * *

(379) * * *

(i) * * *

(C) * * *

(*9*) Previously approved on November 8, 2011, in paragraph (c)(379)(i)(C)(*6*) of this section and now deleted with replacement in paragraph (c)(592)(i)(A)(*1*) of this section, Rule 4601, ''Architectural Coatings,'' amended on December 17, 2009.

* * * * *

(472) * * *

(i) * * *

(C) * * *

(*2*) Previously approved on October 4, 2016, in paragraph (c)(472)(i)(C)(*1*) of this section and now deleted with replacement in paragraph (c)(565)(i)(A)(*3*) of this section, Rule 67.0.1, ''Architectural Coatings,'' adopted on June 24, 2015.

* * * * *

(565) * * *

(i) * * *

(A) * * *

(*3*) Rule 67.0.1, ''Architectural Coatings,'' rev. adopted on February 10, 2021.

* * * * *

(591) [Reserved]

(592) The following regulation was submitted on April 23, 2020, by the Governor's designee, as an attachment to a letter dated April 23, 2020.

(i) Incorporation by reference.

(A) San Joaquin Valley Unified Air Pollution Control District.

(*1*) Rule 4601, ''Architectural Coatings,'' amended on April 16, 2020.

(*2*) [Reserved]

(B) [Reserved]

(ii) [Reserved]

* * * * *

[FR Doc. 2022–27723 Filed 12–21–22; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2002–0021; FRL–4866.1–02–OAR]

RIN 2060–AN36

National Emission Standards for Hazardous Air Pollutants: Site Remediation

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; notification of final action on reconsideration.

SUMMARY: This action finalizes amendments to the national emission standards for hazardous air pollutants (NESHAP) for the site remediation source category. This action finalizes amendments to remove exemptions from the rule for site remediation activities performed under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as a remedial action or a non-time-critical removal action, and for site remediation activities performed under Resource Conservation and Recovery Act (RCRA) corrective actions conducted at treatment, storage, and disposal facilities.

DATES: This final rule is effective on December 22, 2022.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Matthew Witosky, Sector Policies and Programs Division (E143–05), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–2865; and email address: *witosky.matthew@epa.gov.*

SUPPLEMENTARY INFORMATION:

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPA–HQ–OAR–2002–0021. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy. With the exception of such material, publicly available docket materials are available electronically in *Regulations.gov* or in hard copy at the EPA Docket Center, Room 3334, WJC West Building, 1301 Constitution Avenue NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

Organization of this document. The information in this preamble is organized as follows:

I. General Information
- A. Does this action apply to me?
- B. Where can I get a copy of this document and other related information?
- C. Judicial Review and Administrative Reconsideration

II. Background
- A. What is the purpose of this action?
- B. What is the statutory authority for this action?

III. Summary of Final Action and Significant Changes Since Proposal
- A. Removal of the CERCLA and RCRA Exemptions
- B. Retention of the Co-Location Requirement
- C. Compliance Dates

IV. Summary of Cost, Environmental, and Economic Impacts
- A. What are the affected sources?
- B. What are the air quality impacts?
- C. What are the cost impacts?
- D. What are the economic impacts?
- E. What are the benefits?
- F. What analysis of environmental justice did we conduct?

V. Statutory and Executive Order Reviews
- A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act (PRA)
- C. Regulatory Flexibility Act (RFA)
- D. Unfunded Mandates Reform Act (UMRA)
- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
- G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
- H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act
- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
- K. Congressional Review Act (CRA)

I. General Information

A. Does this action apply to me?

Categories and entities potentially regulated by this action are shown in Table 1 of this preamble.

TABLE 1—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

Source category	NESHAP	NAICS code [1]
Industry	40 CFR part 63, subpart GGGGG	325211 325192. 325188. 32411. 49311. 49319. 48611. 42271. 42269.
Federal Government		Federal agency facilities that conduct site remediation activities.

[1] North American Industry Classification System.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at *https://www.epa.gov/stationary-sources-air-pollution/site-remediation-national-emission-standards-hazardous-air.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the action and key technical documents at this same website.

A redline version of the regulatory language that incorporates the finalized changes in this action is available in the docket for this action (Docket ID No. EPA–HQ–OAR–2002–0021).

C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the court) by February 21, 2023. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal

proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

A. What is the purpose of this action?

On October 8, 2003, the EPA promulgated emission standards for control of certain hazardous air pollutants (HAP) from site remediations located at major sources of HAP—the 2003 Site Remediation NESHAP (68 FR 58172); 40 CFR part 63, subpart GGGGG. The 2003 Site Remediation NESHAP applied only to volatile organic HAP. 68 FR 58175. The 2003 Site Remediation NESHAP exempted site remediations performed under CERCLA authority as a remedial action or a non-time-critical removal action and site remediations under a RCRA corrective action conducted at a treatment, storage, and disposal facility (TSDF) that is either required by a permit issued by the EPA or a State program authorized by the EPA under RCRA section 3006; required by orders authorized under RCRA; or required by orders authorized under RCRA section 7003. 68 FR 58172 and 58176; 40 CFR 63.7881(b)(2) and (3). (This document refers to these exemptions as the ''CERCLA and RCRA exemptions''; however, it should be noted that the scope of these exemptions is narrower than the full scope of remediations that may be conducted under, or in relation to, CERCLA or RCRA authority.) The NESHAP also specified that site remediations are not subject to subpart GGGGG unless they are co-located at a facility with one or more other stationary sources that emit HAP and meet the affected source definition specified for a source category that is regulated by another subpart under part 63. 40 CFR 63.7881(a)(2). (This document refers to this as the ''co-location'' criterion.)

The CERCLA and RCRA exemptions were based on the EPA's conclusion that the requirements of these specific types of remediations under CERCLA and RCRA are ''functionally equivalent'' to the HAP emissions control requirements of the 2003 Site Remediation NESHAP. 68 FR 58176. EPA reasoned that these programs use remediation approaches that would generally address the protection of public health and the environment from air pollutants emitted from remediation activities on a site-specific basis. Further, in both programs, the public is given an opportunity to participate in the decision-making process, and both programs are subject to Federal oversight and enforcement authority. 68 FR 58184–85. However, the EPA did not make a determination in promulgating the RCRA and CERCLA exemptions that the kinds of emissions controls, including monitoring, recordkeeping and reporting requirements, that are implemented in the CERCLA and RCRA programs were at least as stringent as the requirements of the CAA, including that RCRA and CERCLA requirements met the maximum achievable control technology (MACT) standard established pursuant to CAA section 112(d). Nor did EPA identify a statutory basis for exempting these sources from CAA section 112 requirements.

Following promulgation of the 2003 Site Remediation NESHAP, on October 8, 2003, the EPA Administrator received a petition for reconsideration of certain aspects of the final rule from the Sierra Club, the Blue Ridge Environmental Defense League, and Concerned Citizens for Nuclear Safety. This petition stated that the EPA (1) lacked the statutory authority to promulgate the CERCLA and RCRA exemptions, and (2) had a duty to set standards for each listed HAP that petitioners alleged were emitted from the source category, specifically referring to heavy metal HAP, not just the volatile organic HAP listed in table 1 of the subpart. In addition, petitioners filed a petition for review of the 2003 Site Remediation NESHAP in the court, *Sierra Club et al.* v. *EPA,* No. 03–1435. The parties agreed to place this case in abeyance pending EPA's review of the petition for reconsideration.

On November 29, 2006, the EPA promulgated technical amendments to the 2003 Site Remediation NESHAP (71 FR 69011), but did not resolve, address, or respond to the issues in the petition for reconsideration. On October 14, 2014, the court ordered the parties in *Sierra Club et al.* v. *EPA* to show cause why the case should not be administratively terminated, and on November 13, 2014, the parties filed a joint response informing the court that they were actively exploring a new approach to the issues raised in the petition. On March 25, 2015, the EPA issued a letter [1] to the petitioners granting reconsideration on the issues raised in the petition and indicated that the agency would issue a **Federal Register** document initiating the reconsideration process (see Docket ID EPA–HQ–OAR–2002–0021–0150). The letter noted that the issue of regulation of heavy metal HAPs should be considered separately and as a part of the statutorily required risk and technology review (RTR). The petition for reconsideration and EPA's 2015 letter granting reconsideration are available for review in the rulemaking docket (Docket ID No. EPA–HQ–OAR–2002–0021–0024 and EPA–HQ–OAR–2002–0021–0150). On May 13, 2016, the EPA proposed to revise subpart GGGGG by removing the CERCLA and RCRA exemptions, as well as to remove the ''co-location'' condition in the NESHAP and requested comment on those proposed revisions (81 FR 29821).

Subsequently, on September 3, 2019 (84 FR 46138), the EPA proposed amendments to the Site Remediation NESHAP related to the RTR which was conducted as required under CAA sections 112(d)(6) and 112(f). In the 2019 proposal, the EPA used the opportunity to request additional comment regarding the implementation of the NESHAP under a scenario in which the CERCLA and RCRA exemptions were removed. Specifically, the EPA sought additional comments on whether subcategorization may be appropriate or whether there were other methods of distinguishing among appropriate requirements for CERCLA or RCRA-exempt sources, including how applicability, monitoring, recordkeeping, reporting, and compliance demonstration requirements could be structured so that formerly exempt sources would be able to comply with the Site Remediation NESHAP effectively and efficiently while also meeting the requirements of

[1] See Docket ID EPA–HQ–OAR–2002–0021–0150.

RCRA and/or CERCLA. 84 FR 46167–69. The EPA explained that it would take comments on these topics but act upon the exemptions at a later date.

Separately, in accordance with our March 25, 2015, letter, the RTR action reviewed the issue of whether heavy metals or other inorganic HAP may be emitted from this source category. We proposed that there is a lack of data indicating such HAP are emitted from this source category but requested comment seeking additional data. 84 FR 46161.

The EPA finalized the RTR on July 10, 2020 (85 FR 41680). We made clear that we were not acting on the CERCLA and RCRA exemptions, 85 FR 41683, and we finalized our proposed determination that there was a lack of data to support the assertion that inorganic and metal HAP are emitted from the site remediation source category and so we did not establish emissions standards for these HAP for the source category (85 FR 41690 and 41694–95).

The EPA proposed and finalized three key changes to the Site Remediation NESHAP in the RTR rulemaking (85 FR 41680). First, we revised leak detection thresholds for certain valves and pumps under the technology review required by CAA section 112(d)(6), see 85 FR 41690–91. Second, the rule addressed the startup, shutdown, and malfunction (SSM) case law under CAA section 112(d)(2) and (3) by adding a set of work practice requirements under CAA section 112(h) to monitor certain pressure release devices (PRDs) for actuation, 85 FR 41691–94. Third, the rule established a work practice standard also related to SSM with respect to planned routine maintenance of control systems on storage tanks, 85 FR 41695–96.

On September 8, 2020, Concerned Citizens for Nuclear Safety, Louisiana Environmental Action Network, and Sierra Club filed a petition for review of EPA's final RTR action in the court, *Concerned Citizens for Nuclear Safety* v. *EPA,* No. 20–1344 (D.C. Cir.). On that same date, Sierra Club filed a petition for reconsideration of the RTR, identifying as grounds for reconsideration the continued existence of the CERCLA and RCRA exemptions, and whether the Site Remediation NESHAP should regulate non-organic HAPs. [EPA–OAR–HQ–2002–0021–0050]

In this action, we are finalizing the May 13, 2016, proposal to remove the CERCLA and RCRA exemptions from the Site Remediation NESHAP and are addressing comments submitted in response to both the 2016 proposal and the 2019 RTR proposal on the exemptions issue. In the same 2016 action, we proposed to remove the criterion in 40 CFR 63.7881(a)(2) that an affected site remediation is only subject to the NESHAP if it is co-located with a facility that is a major source already subject to regulation under at least one other NESHAP in 40 CFR part 63. Based on our review of the public comments, as discussed in this action, we are not finalizing the proposal to remove the co-location criterion in this action.

We are not addressing in this action the second issue raised in the 2020 petition for reconsideration, *i.e.,* whether the EPA has a duty to set standards for non-organic HAP emissions from site remediation activities. The EPA will address that issue in a separate rulemaking.

B. What is the statutory authority for this action?

Section 112 of the CAA establishes a regulatory process to address emissions of HAP from stationary sources. CAA section 112(d) requires the Agency to promulgate technology-based NESHAP for each category or subcategory of major sources listed pursuant to CAA section 112(c). ''Major sources'' are defined in CAA section 112(a) as sources that emit or have the potential to emit 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of any combination of HAP.

III. Summary of Final Action and Significant Changes Since Proposal

This action finalizes the EPA's determinations pursuant to the reconsideration of certain aspects of the 2003 Site Remediation NESHAP, and amends, as proposed, the Site Remediation NESHAP to remove the CERCLA and RCRA exemptions at 40 CFR 63.7881(b)(2) and (3). For affected sources that are existing sources, we are finalizing a compliance date of 18 months from the effective date of the final amendment removing the CERCLA and RCRA exemptions (see section III.C. for further discussion). We define existing sources, for purposes of this action, as those site remediations that commenced construction or reconstruction on or before May 13, 2016, the date of publication of the proposal to remove the exemptions. New sources, for purposes of this action, are those site remediations that commenced construction or reconstruction after May 13, 2016. Any new sources that would have formerly been exempted by 40 CFR 63.7881(b)(2) or (3) must comply with the NESHAP as of the date this document is published in the **Federal Register**. CAA section 112(d)(10), (i)(1).

The EPA is not finalizing the proposed amendment to remove the requirement that an affected site remediation be co-located with a facility that is regulated by other NESHAP. Our reasoning for this decision is explained in section III.B of this document. In the following subsections, we introduce and summarize the final amendments to the Site Remediation NESHAP. For each issue, this section provides a description of what we proposed and what we are finalizing, the EPA's rationale for the final decisions and amendments, and a summary of key comments and responses. For all comments not discussed in this preamble, comment summaries and the EPA's responses can be found in the comment summary and response document available in the docket.

A. Removal of the CERCLA and RCRA Exemptions

As discussed in the May 13, 2016, notice of proposed rulemaking on reconsideration of the NESHAP (81 FR 29821), the 2003 Site Remediation NESHAP exempted site remediations performed under the authority of CERCLA and those conducted under a RCRA corrective action or other required RCRA orders. The exemptions were based on the EPA's conclusion that the requirements of these programs consider the same HAP emissions as the 2003 Site Remediation NESHAP and, in addition, these programs provide opportunities for public involvement through the Superfund Record of Decision process and the RCRA permitting process for corrective action cleanups. The EPA concluded that these programs serve as the functional equivalent of the establishment of NESHAP under CAA section 112. Petitioners asserted that the public lacked an opportunity to comment on the functional equivalence conclusion. In the May 13, 2016, proposal, we proposed to amend the rule by removing 40 CFR 63.7881(b)(2) and (3) and solicited comment. In the proposal, we explained that on reconsideration we agreed with petitioners that the Agency lacked statutory authority under the Clean Air Act to exempt affected sources in a listed source category from otherwise applicable NESHAP requirements on the ''functional equivalence'' basis articulated in the 2003 final rule. 81 FR 29824. We further explained that the requirements of the Site Remediation NESHAP are appropriate and achievable at all subject site remediations, including those conducted under CERCLA or RCRA authority. *Id.* Also, as noted above, on September 3, 2019 (84 FR 46138), as

part of the statutorily required RTR, the EPA proposed amendments to the Site Remediation NESHAP. In the 2019 proposal, the EPA used the opportunity to request additional comment regarding the implementation of the NESHAP under a scenario in which the CERCLA and RCRA exemptions were removed.

Through the 2016 and 2019 proposals for the site remediation source category, the EPA solicited and received comments both in favor of and in opposition to the removal of the CERCLA and RCRA exemptions. The key comments and our responses are summarized below.

Comment: Several commenters stated that the EPA failed to provide a sufficient basis and purpose for the rule amendments as required by CAA section 307(d)(3). These commenters stated that nothing in CERCLA, RCRA, or the CAA has changed that would make the CERCLA and RCRA exemptions improper. The commenters also stated that since the agency does not expect any HAP reductions from the proposed changes (and in light of the 2019 risk assessment showing no adverse risks), there is no basis for these amendments. Several of these commenters stated that the EPA did not provide a basis for the proposed changes other than that the agency signed a consent agreement with the Sierra Club, noting that the proposal does not discuss why the agency's original conclusion that a RCRA/CERCLA-managed site remediation is the "functional equivalent" of the site remediation standard was incorrect or why that finding should be changed. One commenter also stated that CERCLA and RCRA provide ample safeguards for protecting public health and welfare with regard to HAP emissions, as evidenced by the EPA's estimate that there would be no further HAP reductions with the proposed changes. The commenter stated that due to this, the removal of the CERCLA and RCRA exemptions does not satisfy the CAA's intent to list sources which cause or significantly contribute to air pollution which might "reasonably be anticipated to endanger the public health or welfare."

Response: The EPA disagrees that the CERCLA and RCRA exemptions are proper. As explained in the preamble to the 2016 proposed rule, see 89 FR 29823–29824, the basis and purpose of the proposed rule amendments are to meet the obligations of the CAA to establish NESHAP for all sources in the listed source category. The site remediation source category was listed under CAA section 112(c)(1). Once a source category is listed, CAA section 112(c)(2) mandates that the EPA "shall establish emission standards under subsection [112](d)." CAA section 112(d) in turn mandates the establishment of emission standards "for each category or subcategory of major sources and area sources." While CAA section 112(d)(1) allows for distinguishing among classes, types, and sizes of sources in establishing emission standards, nothing in CAA section 112 authorizes the EPA to exempt certain sources entirely from emissions standards based on regulation under some other statute. Congress has made clear through the plain language of CAA section 112 that the development and implementation of NESHAPs promulgated pursuant to CAA section 112 is a mandatory mechanism for regulation of HAP emissions across all major sources of such emissions. *e.g., National Lime Association* v. *EPA,* 233 F.3d 625, 633–34 (D.C. Cir. 2000) (finding that section 112(d)(1) requires EPA to set emissions standards for all listed HAP emitted from each listed major source category or subcategory). This holds true for the site remediation source category notwithstanding that the RCRA and CERCLA programs may also address air pollutant emissions from disposal and remediation activities.

While we originally promulgated exemptions from the NESHAP for certain facilities, including facilities where site remediations were performed under authority of CERCLA or RCRA, we have re-evaluated the legal basis for these exemptions and determined that they should be removed. In response to the petition for reconsideration received pursuant to section 307(d)(7)(B) of the CAA in 2003 from the Sierra Club, the Blue Ridge Environmental Defense League, and Concerned Citizens for Nuclear Safety (which is available in the docket for this action), we have reconsidered the exemptions in the rule for these sources and our rationale for this approach.[2] We have determined, as explained above, that there is no statutory authority under section 112 of the CAA to exempt sources in a listed source category from NESHAP requirements simply because those sources may be subject to similar requirements through other statutes. In removing these exemptions, the EPA will be meeting its statutory obligations to establish and apply MACT standards for all affected source emissions of HAP at these major sources in the site remediation source category.

With respect to commenters' contention that nothing has changed since the 2003 promulgation of the NESHAP, we note that the basis for removing the exemption is to bring this NESHAP in line with the statutory requirement of CAA section 112 to regulate all affected sources of HAP in a listed source category. Case law since the 2003 promulgation of the NESHAP has only strengthened and confirmed that this is a correct understanding of the plain language of the statute. *E.g., Sierra Club* v. *EPA,* 479 F.3d 875, 878 (D.C. Cir. 2007) (confirming the holding in *National Lime Association* v. *EPA,* 233 F.3d 625, 633–34 (D.C. Cir. 2000)).

With respect to commenters' contention that EPA did not, in its 2016 proposal, explain why the agency's original conclusion that a RCRA or CERCLA-managed site remediation is the "functional equivalent" of the site remediation standard was incorrect, EPA disagrees that such an explanation is necessary, because the CAA does not authorize exemptions on this basis in the first place. Nonetheless, as the EPA explained in the May 2016 proposal, the site remediation activities conducted under the authority of CERCLA and RCRA are similar to site remediation activities that were not exempt from the Site Remediation NESHAP, and the requirements of the Site Remediation NESHAP are appropriate for and achievable by all site remediation activities.

Comment: Several commenters stated that the Site Remediation NESHAP amendments should not apply retroactively to existing RCRA and CERCLA site remediations. Two commenters added that if it were to apply to any of these sites, it should be only to remediation projects that are not yet fully developed. In the alternative, these commenters suggested that compliance with CERCLA or RCRA corrective action requirements should be deemed as compliance with the Site Remediation NESHAP. Other commenters suggested that where remediation plans under CERCLA or RCRA have already been approved and the plans include air emission control requirements, the EPA should view these as acceptable work practice and control standards. These commenters stated that this would also alleviate any potential conflicts between the Site Remediation NESHAP and the approved remediation plan under CERCLA or RCRA. One commenter also added that the evaluations of the hazards associated with the remediation activity required under CERCLA are more

[2] Commenter is incorrect that the EPA entered into a consent decree with environmental organizations. While the EPA and those parties had considered entering into a settlement agreement in *Sierra Club* v. *EPA,* No. 03–1435 (D.C. Cir.), that agreement was never finalized.

inclusive and protective than the Site Remediation NESHAP requirements. Several commenters stated that a grandfathering provision should be put in place to ensure the sites currently conducting an approved CERCLA or RCRA remediation at the time of the adoption of the final rule can continue to clean up with no delays. One commenter noted that there is precedent for this in NESHAPs, such as the Pharmaceutical NESHAP, which grandfathered existing process vents that were controlled by 93 percent or greater prior to the NESHAP proposal date.

A commenter added that removal of the exemption would eliminate the EPA's current site-specific discretion to determine whether application of the Site Remediation NESHAP is relevant and appropriate for a site. The commenter noted that the reason many sites are addressed under CERCLA is because they are large and complex, and applying the Site Remediation NESHAP may not be consistent with the methods that would otherwise be used to perform the remediation. The commenter also added that even if an alternative work practice were approved, this could either delay the remediation or force additional administrative activities to occur under the CAA. The commenter also remarked that under CERCLA, only the substantive requirements of other laws are considered potentially relevant and appropriate, but not the administrative requirements, such as reporting and recordkeeping. The commenter asked that the EPA consider creating subcategories that would exempt certain large-scale remediation activities, such as cleanups of large volumes of soil, sludge, or sediment, as the Site Remediation NESHAP may interfere with the use of the remedial technologies that would otherwise be selected under the National Contingency Plan.

Response: The EPA disagrees that existing site remediations should not be subject to the Site Remediation NESHAP. Section 112 of the CAA requires that the EPA issue regulations addressing both new and existing sources. *See, e.g.,* CAA sections 112(a), (d), and (i). Removing the exemptions is not retroactive rulemaking. Retroactivity refers to requirements ''extending in scope or effect to matters that have occurred in the past.'' Black's Law Dictionary 1318 (7th Ed. 1999). The EPA is not applying the removal of the exemptions retroactively but rather prospectively. The requirements of the NESHAP will apply going forward at both new and existing site remediation sources. As authorized under CAA section 112(i)(3), the compliance date for existing sources is 18 months after the effective date of this final rule. In line with how other source categories are regulated, this will provide time for existing site remediations (existing as of May 13, 2016) that become newly subject to the NESHAP through the removal of the CERCLA and RCRA exemptions to comply with the requirements of the Site Remediation NESHAP in accordance with the governing cleanup program's statutory and regulatory requirements. During this time period, the owners or operators of the site remediation affected source will be able to evaluate the need for additional emissions control in accordance with the governing cleanup program and put those controls in place by the compliance date. The commenters have supplied no information with reasonable specificity that this time period for compliance, or the NESHAP's requirements themselves, will unduly delay cleanup activities.

The commenters' requests to consider compliance with CERCLA or RCRA sufficient for compliance with CAA requirements is effectively a request to simply continue the exemptions. As explained above, Congress directed EPA, under CAA section 112, to establish emission standards for listed source categories under the procedures and criteria of that section of the Act and did not provide for EPA to defer that standard-setting process to other statutory programs.

We are not reopening our 2003 determinations regarding MACT for the Site Remediation NESHAP. Under the reasoning and analysis of the original 2003 promulgation of 40 CFR part 63, subpart GGGGG, the EPA's MACT findings were equally valid for the CERCLA and RCRA sources that the EPA exempted.[3] However, we reviewed the comments to determine whether a basis existed to revisit these determinations with respect to the CERCLA and RCRA sources, and we find that commenters have not provided information to the agency that would warrant reopening these determinations.

In particular, commenters have not supplied sufficient information to establish why ''grandfathering'' a particular emission standard is appropriate, even if ''grandfathering'' may have been used in the one example cited by commenter. The requirements of the NESHAP have been applicable to non-exempt new and existing site remediation sources since the original NESHAP was promulgated, and the EPA is not aware of any existing sources facing difficulty with compliance with the requirements of the NESHAP, nor have commenters supplied such information.

Nor have the commenters supplied information or examples demonstrating that compliance with the requirements of the NESHAP is incompatible or will interfere with the implementation of ongoing CERCLA or RCRA remediation activities at the formerly exempt sites. In general, the Site Remediation NESHAP does not prescribe remediation strategies, technology, or equipment, but rather establishes emissions limits and in some cases work practice standards that apply depending on the kinds of strategies selected for the remediation (*e.g.,* if process vents are used, then requirements applicable to process vents apply, if tanks are used, then requirements applicable to tanks apply, etc.). As the EPA indicated at proposal, and as commenters have generally affirmed, the EPA believes that, for the most part, the standards established in the NESHAP are already being met at CERCLA and RCRA overseen cleanups, and thus the emissions control requirements of the NESHAP should not be unreasonably costly or onerous to meet.

Further, the process and sources of information used in adopting the original standards confirm that there is no need to reopen our category-wide MACT determinations. To select a MACT emissions limitation (or work practice standard) for each affected source, in the original promulgation of the NESHAP, we looked at the types of air emission controls required under national air emission standards for sources similar to those sources that potentially may be associated with site remediations. These air emission standards are MACT for other source categories, particularly the Off-site Waste and Recovery Operations (OSWRO) NESHAP under 40 CFR part

[3] Similarly, the amendments to the NESHAP in the RTR action in 2020 are applicable and achievable for the entire source category and were not premised on the continued existence of the CERCLA and RCRA exemptions. Two of the three key changes were related to the need to address SSM case law under CAA section 112(d)(2) and (3) and were applied as achievable work practice standards for the entire source category, 85 FR 41691–96. The EPA acknowledged that its analysis of the impact of the third change, the leak detection and repair enhancements, was not assessed for exempt sources, *id.* 41690. However, the EPA did not find any basis in the RTR rulemaking to treat the exempt sources differently should the exemption be lifted, but merely noted that the impacts of this change would be considered if the exemptions were removed. The EPA has considered these impacts for the CERCLA and RCRA exempt sources, including both environmental benefits and costs, with respect to all of the key changes to the NESHAP made in the RTR. Section IV of this preamble.

63, subpart DD, and the air emission standards for RCRA hazardous waste treatment, storage, and disposal facilities under subparts AA, BB, and CC in 40 CFR parts 264 and 265 (RCRA Air Rules). The control levels established by the emission limitations and work practices we promulgated are widely implemented at existing sources subject to these similar rules, thus demonstrating that the control levels are technically achievable. *See* 68 FR 58174.

Thus, these control requirements and action levels already existed in either the RCRA Air Rules or the OSWRO NESHAP, or both. Given that these existing rules specify control requirements for sources similar to those comprising the affected source group for the Site Remediation NESHAP, and that sources already regulated by these existing standards also will likely manage and/or treat remediation material regulated by the Site Remediation NESHAP, we continue to believe that the requirements of subpart GGGGG represent achievable industry practice for remediation activities including at the formerly exempt RCRA and CERCLA sites.

Further, as commenters acknowledge, CERCLA cleanups should be designed to meet the substantive environmental requirements of other statutes in accordance with compliance with Applicable or Relevant and Appropriate Requirements (ARARs) under CERCLA section 121(d). The programmatic requirements of CERCLA require the consideration of virtually any Federal standard as an ARAR, including the Site Remediation NESHAP. In other words, substantive requirements of the Site Remediation NESHAP are expected to be considered as potential ARARs.[4] Furthermore, the substantive provisions may also have been considered relevant and appropriate requirements under CERCLA on a site-specific basis since the promulgation of the regulations in 2003.

Finally, the EPA notes that decisions on compliance with ARARs are made within the CERCLA regulatory framework rather than the Clean Air Act, and as a result, the EPA will not address those issues in this action. For example, CERCLA authorizes waivers from applicable environmental regulations in certain situations. Two examples of potential waivers authorized in the statute are when compliance with a substantive Federal requirement that may be an ARAR may result in greater risk to human health and the environment or where other alternatives will achieve equivalent performance. CERCLA section 121(d)(4). In any event, CERCLA remediations must assure protection of human health and the environment. While the EPA anticipates that waiver circumstances should be rare in meeting the requirements of the Site Remediation NESHAP, nonetheless, such flexibility is available on an as-needed basis through the provisions of CERCLA rather than the CAA.

For the reasons discussed above and in the preamble for the proposed rule and our response to comments document available in the docket, we are removing the CERCLA and RCRA exemptions from the Site Remediation NESHAP.

B. Retention of the Co-Location Requirement

In the May 13, 2016, proposal on reconsideration, the EPA proposed to remove the criterion in 40 CFR 63.7881(a)(2) that an affected site remediation is only subject to the NESHAP if it is co-located with a facility that is a major source already subject to regulation under at least one other NESHAP in 40 CFR part 63. This rule change was proposed to further effectuate the removal of the exemptions so that any formerly exempt CERCLA or RCRA site remediations that are themselves major sources of HAP, without regard for co-location with a major source, should be subject to the rule. 81 FR 29824. This proposed amendment would have the effect of making any site remediations with emissions in excess of major source thresholds subject to the Site Remediation NESHAP for the first time, and would affect all site remediations, not only those falling under the CERCLA or RCRA exemptions.

Based on our review of the public comments, as discussed below, the EPA is not finalizing this proposed rule amendment in this action.

The EPA received several comments in opposition to the removal of the co-location requirement. Key comments and our response include the following:

Comment: Two commenters expressed concern that with the removal of the criteria that a remediation be co-located with a major source facility for HAP, an oil or chemical spill with emissions over the major source thresholds set out in CAA section 112(a)(1) would be subject to the rule, even if the spill occurred in a remote, inaccessible, or potentially expansive location, such as remote Alaska. The commenters urged the EPA to keep the co-location condition or provide an exemption for remediation as a result of a spill response. One commenter added that without the co-location condition, applicability will likely extend to small sources that were not considered in the original rulemaking.

Response: We have concluded that it is not appropriate to finalize the proposed rule amendment to remove the co-location criterion, and we are retaining that provision of the NESHAP. Based on the available information regarding the amount of HAP emitted from site remediations, remediation facilities that are not co-located with major sources are not major sources of HAP—*i.e.,* the Agency has no data to suggest that site remediation affected sources that are not already co-located with a major source themselves emit greater than 10 tons per year of any single HAP or 25 tons per year of all HAPs.[5] The effect of removing the co-location criterion would be to require applicability determinations in many situations where it would be extremely difficult to substantiate whether the applicability thresholds are met or not, and yet it would be unlikely that such thresholds are met. As commenters observe, such circumstances could arise in emergency scenarios where there is an overriding imperative to address immediate threats to human health or the environment. At such source locations (*e.g.,* in the field or along transportation corridors), neither the ''source'' itself (*e.g.,* the site of a spill that is being remediated), or its ''owner or operator,'' may have any experience with CAA compliance, including the necessary permitting requirements, the data for making CAA applicability determinations, or requirements for monitoring, recordkeeping, and reporting. They may not even possess requisite ownership interests in such sites to be able to effectively implement such requirements. The onset of Site Remediation NESHAP compliance obligations in these circumstances—even if limited to making an applicability determination based on the level of emissions that could occur from site remediation activities—could inhibit or delay responders from taking necessary, immediate steps to protect human health and the environment. Therefore, because there are no data

[4] Compliance With Other Laws Manual Parts I and II (OSWER 540–G–89–006, Aug. 8, 1989 and Aug. 1989), both available in the docket at EPA–HQ–OAR–2002–0021.

[5] EPA's analysis for the RTR reviewed NEI data for active remediations. Active remediation emissions averaged less than 1 percent of emissions of the associated major sources subject to the rule. [National Emission Standards for Hazardous Air Pollutants: Site Remediation Residual Risk and Technology Review, Docket ID EPA–HQ–OAR–2018–0833–0001].

suggesting that there are site remediations that are themselves major sources of HAP, and to avoid the potential that rendering applicability determinations could inhibit site remediations in a variety of unusual or emergency circumstances, the EPA is retaining the applicability condition that site remediations be co-located with a facility that is a major source regulated by at least one other NESHAP.[6]

As the EPA is not finalizing the proposed amendment to remove the co-location condition, remote sites not co-located at a stationary source of HAP regulated by another NESHAP will not be regulated through this action. However, we note that if and when a site remediation is performed as a result of a spill, it will be necessary to bring personnel and remediation equipment to the area, and those responding to such circumstances can be expected to implement situation-appropriate measures to protect air quality under relevant emergency response actions, as provided for under CERCLA, Clean Water Act section 311, and other relevant remediation and emergency response statutes at the state and Federal levels.

C. Compliance Dates

The EPA proposed several compliance dates in the May 13, 2016, proposed notice of reconsideration. We proposed to make the recordkeeping and reporting requirements specified in 40 CFR 63.7950 through 63.7953 and 63.7955 applicable to new and existing affected sources conducting site remediations under CERCLA or RCRA on the effective date of the final amendments removing the CERCLA and RCRA exemptions, which is the date of publication of this final rule in the **Federal Register**.

For existing affected sources (*e.g.,* existing as of May 13, 2016), we proposed a compliance date for the rule's other requirements for site remediations conducted under the authorities of CERCLA or RCRA of 18 months from the effective date of the final amendments removing the CERCLA and RCRA exemptions.

For new affected sources, we proposed a compliance date for the rule's requirements for site remediations conducted under the authorities of CERCLA or RCRA of the effective date of the final amendments removing the CERCLA and RCRA exemptions or upon initial startup, whichever is later.

Based on our review of the public comments, as discussed below, the EPA is finalizing this action with one change to the proposed compliance dates for existing affected sources. For existing affected sources, the compliance date for *all* the site remediation NESHAP requirements, including the recordkeeping and reporting requirements specified in 40 CFR 63.7950 through 63.7953 and 63.7955, is 18 months from the effective date of the final amendments removing the CERCLA and RCRA exemptions. This date is June 24, 2024. For new affected sources, the compliance date for all the site remediation NESHAP requirements is the effective date of the final amendments removing the CERCLA and RCRA exemptions or upon initial startup, whichever is later. CAA section 112(d)(10), (i)(1).

The EPA received several comments regarding these compliance timeframes. These comments are summarized below along with our responses.

Comment: Several commenters stated that a compliance date 18 months after the final rule is promulgated may be appropriate for facilities that do not require additional emission controls but claimed that additional time will be needed for facilities that require additional emission controls. Several other commenters stated that 18 months is not enough time to comply with the rule, and potentially not enough time to even determine whether sources are exempt from the rule. These commenters suggest 3 years be given for compliance with the rule amendments. One commenter also suggested that the EPA incorporate into the compliance date the time needed to modify existing RCRA permits or CERCLA records of decision (RODs) to reflect new control devices, time for getting an air construction permit, and time for approval of alternative test methods. This commenter suggested a compliance date of 5 years after the promulgation of the standards. One commenter noted concerns about the compliance date for new sources, which may start up soon after promulgation of the amendments. The commenter recommends that new sources be provided 3 years from the amendment affected date or until initial startup, whichever is later, to comply.

Response: We have concluded that 18 months after the effective date of this action is sufficient time for existing sources to come into compliance. We consider 18 months a reasonable estimate for the work to be done. We also note that commenters have not supplied reasonably specific information that 18 months is not practicable, and the EPA is obligated to require compliance with these requirements as expeditiously as practicable. CAA section 112(i)(3). Further, the EPA does not have discretion under the statute to provide 5 years for existing sources to come into compliance as suggested by one commenter. *See id* (requiring compliance no later than 3 years after the effective date).

As the EPA indicated at proposal, and as commenters have generally affirmed, for the most part, the emissions standards established in the NESHAP are already being met at cleanups overseen under CERCLA and RCRA, and thus additional emissions controls are unnecessary in most cases. To comply with the NESHAP, we anticipate that some facilities may need to install pressure relief device monitors, which entails identifying affected pressure release devices and installing monitors that are capable of alerting a facility operator of a pressure release device actuation. When these requirements were added to the Site Remediation NESHAP in 2020 (85 FR 41680), the compliance date selected for existing sources was 18 months, to allow site remediation facility owners and operators to research equipment and vendors, and to purchase, install, test, and properly operate any necessary equipment. The EPA considers that providing more than 18 months now for existing facilities operating under the authority of RCRA or CERCLA to comply would be excessive compared to the compliance period provided for other existing facilities and relative to the actual work involved. We also anticipate that some existing facilities may need to revise their leak detection and repair (LDAR) programs to use the leak definitions included in 40 CFR part 63, subpart UU, for valves and pumps. A compliance time of 18 months is adequate for existing facility owners or operators to modify their existing LDAR programs to comply with these standards for pumps and valves. When the requirement to comply with 40 CFR part 63, subpart UU, was added to the Site Remediation NESHAP in 2020 (85

[6] We note that the fact that we do not believe there are site remediations that are themselves major sources in no way undermines the basis for the listing of the site remediation category itself (which we are not reopening), or the requirements of the NESHAP. Site remediation affected sources are associated with other major sources of HAP, and site remediation sources would otherwise go unregulated under CAA section 112 at those major sources in the absence of this NESHAP. Thus, the EPA views this NESHAP as necessary to ensure that all sources of HAP at major sources are addressed under CAA section 112. *National Lime Association* v. *EPA,* 233 F.3d 625, 633–34 (D.C. Cir. 2000) (finding that section 112(d)(1) requires EPA to set emissions standards for all listed HAP emitted from each listed major source category or subcategory); *Sierra Club* v. *EPA,* 479 F.3d 875, 878 (D.C. Cir. 2007) (confirming holding that section 112(d)(1) requires EPA to set emissions standards for all listed HAP emitted from each listed major source category or subcategory).

FR 41680) for the leak definitions for valves and pumps rather than the leak definitions of 40 CFR part 63, subpart TT, we provided a one-year compliance date for these requirements for existing facilities. However, to simplify compliance, in this action we have provided one date (*i.e.,* 18 months after promulgation) by which existing facilities must meet all requirements.

In order to avoid any confusion and unnecessary burden regarding the onset of compliance requirements under the NESHAP for formerly exempt existing sources (*e.g.,* existing by May 13, 2016), we are not finalizing our proposal that existing sources comply by the effective date of the final rule with the recordkeeping and reporting requirements of 40 CFR 63.7950 through 63.7953 and 63.7955. While we generally believe such requirements could be complied with relatively quickly, the content of many of these requirements relates to information regarding compliance with emissions limitations, work practice standards, or other requirements that would not begin until 18 months after the effective date of this action. *E.g.,* 40 CFR 63.7951(a)(1) (first compliance report not due until the onset of compliance obligations according to the schedule established in 40 CFR 63.7883). The Agency has determined that it would make sense in this case to simply align the onset of all requirements of subpart GGGGG for existing sources under a single compliance schedule. Thus, for existing sources, the compliance date for all requirements of the NESHAP will be 18 months from the effective date of this rule.

Affected sources that commenced construction or reconstruction after May 13, 2016 (the date we proposed to remove the exemptions), are ''new sources'' for purposes of section 112 and must comply immediately upon the effective date of this final rule or on initial startup, whichever is later. This is consistent with the CAA, and the EPA does not have discretion to alter this requirement. CAA section 112(a)(4), 112(d)(10), and 112(i)(1).

To the extent any source-specific circumstances may exist warranting potential relief from compliance timing as authorized by the statute, source owners or operators are encouraged to review the mechanisms for obtaining such relief that are available under subpart A of part 63. 40 CFR 63.6. For example, 40 CFR 63.6(i) allows the Administrator to grant extensions of compliance with emission standards under certain specified circumstances.

For purposes of complying with the Initial Notification requirements of 40 CFR 63.9(b)(2), the EPA is not finalizing any changes to the language of 40 CFR 63.7950 in this action. However, with respect to both new and existing affected sources formerly covered by the CERCLA and RCRA exemptions being removed in this action, the Agency interprets the phrase ''120 calendar days after the source becomes subject to this subpart'' as used in paragraphs (b) and (c) of § 63.7950 as referring to the date 120 calendar days after the publication of this document in the **Federal Register**.

Finally, we note that when and how records of decision at CERCLA Superfund sites may be reopened, amended, or modified is a matter to be addressed within the Superfund program itself rather than in this CAA action.

We are, therefore, finalizing a compliance date of 18 months from the effective date of these final amendments for existing sources and on the effective date or upon initial startup, whichever is later, for new sources that become subject to the Site Remediation NESHAP as a result of the removal of the CERCLA and RCRA exemptions.

IV. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected sources?

We estimate 74 facilities will become subject to the Site Remediation NESHAP as a result of the removal of the CERCLA and RCRA exemptions. Based on available information from the RCRA and CERCLA programs, 31 of these 74 facilities are expected to be subject to only a limited set of the rule requirements under 40 CFR 63.7881(c)(1). Due to the low annual quantity of HAP contained in the remediation material excavated, extracted, pumped, or otherwise removed during the site remediations conducted at these facilities, they would likely only be required under the Site Remediation NESHAP to prepare and maintain written documentation to support the determination that the total annual quantity of the HAP contained in the remediation material excavated, extracted, pumped, or otherwise removed at the facility is less than 1 megagram per year. For the remaining 43 facilities, we anticipate each facility will have an annual quantity of HAP in the removed remediation material of 1 megagram or more. For these facilities, we expect that the facilities already generally meet the emission control and work practice requirements of the Site Remediation NESHAP. As discussed in further detail below, we anticipate certain formerly exempt facilities will incur some limited costs to comply with current SSM provisions in the NESHAP following the RTR rulemaking, 85 FR 41691–96, and the updating of leak detection and repair requirements under CAA section 112(d)(6), 85 FR 41690–91. These impacts are estimated below.

The 2020 RTR rulemaking for the site remediation source category made three substantive changes to the standards. We modified the threshold for detection of leaks for valves and pumps within the existing LDAR program. We also added a requirement to monitor certain pressure release devices (PRDs).[7] While current RCRA standards in subpart BB (40 CFR 264.1050) include LDAR, the leak threshold for valves and pumps in light liquid service are 10,000 ppm. In the 2020 RTR for site remediation, the NESHAP's thresholds were revised to 500 ppm for valves, 1,000 ppm for pumps upon inspection, and 2,000 ppm to make a repair. These changes pursuant to the technology review could require additional actions from affected sources to comply with the Site Remediation NESHAP. However, the decision to remove the CERCLA and RCRA exemptions is not dependent on or affected by the cost of compliance with these changes. We stated in the 2016 proposal that we did not anticipate significant costs of compliance for sources affected by removal of the exemptions. We continue to find this to be the case; however, given that the NESHAP was modified in the interim, we have updated our impact analysis to reflect these changes in the NESHAP, which may result in slightly greater environmental benefits due to removing the exemptions, and some slightly higher compliance costs, as summarized in section IV.C.[8]

Of the 43 facilities that we anticipate will have an annual quantity of HAP in the removed remediation material of 1 megagram or more, we anticipate that 30 will have no applicable emission control requirements or work practice standards because the waste is shipped offsite for treatment and no controls or work practice requirements would be applicable prior to treatment. For these 30 facilities, we anticipate the only new requirements for the Site Remediation NESHAP will be the initial and ongoing recordkeeping and reporting obligations

[7] The EPA added a work practice standard for certain storage vessels. That work practice was determined to be without cost. 85 FR 41696. Note that the SSM changes were made under authority of 112(d)(2) and (3) rather than (d)(6).

[8] While this section discloses to the public the overall anticipated impacts of this action as per standard Agency practice, the EPA is not reopening any of its MACT or RTR determinations for this source category. *See* section III.A.

required by 40 CFR 63.7936 and 63.7950 through 63.7952. These sections describe the recordkeeping and reporting activities required for transferring the remediation material off-site to another facility; the initial notification and on-going notification requirements; the ongoing semi-annual compliance reporting requirements; and recordkeeping requirements for continuous monitoring, planned routine maintenance, and for units that are exempt from control requirements under §§ 63.7885(c) and/or 63.7886(d).

The remaining 13 facilities are anticipated to have on-site remediation activities for which the emission control requirements of the NESHAP will apply. While we anticipate that most of these emission control activities are already being conducted under existing requirements through RCRA or CERCLA, the PRD and revised LDAR requirements (*e.g.,* new leak detection and repair thresholds for valves and pumps) will also apply, as well as the recordkeeping and reporting activities described above.

Finally, as explained in the following section, while the EPA generally expects that existing, formerly exempt site remediations are already meeting the substantive emissions control requirements of the NESHAP (with the possible exception of the revisions to the NESHAP promulgated in the 2020 RTR rulemaking), there is at least some anecdotal evidence from comments that this may not be the case in all circumstances. As explained in greater detail in the response to comments document, to the extent this situation exists, it could mean the compliance costs of this action are proportionately greater than we estimate; however, such circumstances do not obviate any prior determinations of cost-effectiveness with respect to this NESHAP. Indeed, such circumstances would only strengthen the basis for removing the exemptions to ensure that the emissions reduction benefits of this NESHAP are achieved.

While new site remediations are likely to be conducted under the authority of CERCLA or RCRA in the future, we are currently not aware of any such new site remediation affected sources that are expected to be constructed.

The potential scope of this action's impacts on affected entities is discussed in greater detail in the memorandum, "National Impacts Associated with the Final Amendments to Remove the Exemption for Facilities Performing Site Remediations under CERCLA or RCRA in the NESHAP for Site Remediation," which is available in the rulemaking docket (Docket ID No. EPA–HQ–OAR–2002–0021).

B. What are the air quality impacts?

We estimate that the application of the change in the LDAR leak thresholds to the formerly exempt sources will result in a HAP emissions reduction of 2 tons per year. As explained in the memo "Leak Detection and Repair Program Impacts for Site Remediation RCRA and CERCLA Facilities" the lower leak threshold has the potential to reduce emissions by requiring repair of smaller leaks.

A second change made in the 2020 rule included a requirement to perform additional monitoring of PRD actuations that will also apply to formerly exempt sources. The PRD monitoring leads to emission reductions by immediately alerting operators to the actuation of a PRD, which is typically caused by a malfunction. Due to their nature, the frequency or duration of malfunctions cannot be predicted, so estimation of future emissions reductions is not possible. As such, no additional emissions reductions due to the addition of PRD monitoring are included in our assessment of air quality impacts.

For the remainder of the Site Remediation NESHAP requirements, we estimate the potential for a small amount of HAP emission reductions from the removal of the CERCLA and RCRA exemptions. We expect that most facilities newly becoming subject to the rule will either be subject to a limited set of the emissions control requirements of the rule due to the low amount of HAP contained in the remediation material handled, will already meet the emissions control requirements of the rule, or will not have any applicable emissions control requirements for the specific remediation activities and material handled. We received comments that some sources subject to RCRA or CERCLA requirements would be required to add or supplement controls if the applicability of the NESHAP was changed. The EPA acknowledges that such a situation could arise and only strengthens the basis for removing the exemptions to ensure that the emissions reduction benefits of this NESHAP are achieved. The commenters did not provide information to allow us to make a reliable estimate of how often this may occur, or the cost or amount of emission reductions that could result from applicable requirements and controls. It is also possible that with further examination of the NESHAP and the existing emissions controls at their facility(s), a commenter could determine that no further emission control is necessary. Another possibility is that certain requirements that should have been in place will now be imposed, and the corresponding emissions reductions will now be realized, further strengthening the basis for removing these exemptions. Thus, the EPA acknowledges that there may be HAP emissions reductions as a result of the remainder of the Site Remediation NESHAP requirements, but we have not quantified the potential reductions beyond the 2 tons per year from LDAR reductions, due to a lack of information to substantiate or quantify the potential reductions. Therefore, while unquantified, we consider there is a potential for an unquantified amount of HAP emission reductions to result from this action.

C. What are the cost impacts?

We anticipate that 13 of the 74 affected facilities will implement additional emissions control measures to meet the LDAR and PRD requirements of the Site Remediation NESHAP at a total estimated capital cost of $79,000 and a total annual cost of $21,000 for all 13 facilities. We have estimated the nationwide annual compliance costs, including the LDAR and PRD requirements for these facilities as well as the reporting and recordkeeping requirements for all 74 affected facilities to be approximately $2.7 million.

D. What are the economic impacts?

The EPA conducted economic impact analyses for this final rule, as detailed in the memorandum, "Economic Impact Analysis for Site Remediation NESHAP Amendments: Final Report," which is available in the docket for this action (Docket ID No. EPA–HQ–OAR–2002–0021). The economic impacts of the rule are calculated as the percentage of total annualized costs incurred by each affected ultimate parent owner relative to their revenues. This ratio provides a measure of the direct economic impact to ultimate parent owners of facilities while presuming no impact on consumers. We estimate that none of the ultimate parent owners affected by this proposal will incur total annualized costs of 0.1 percent or greater of their revenues. Thus, these economic impacts are low for affected companies and the industries impacted by this rule, and there will not be substantial impacts on the market. The costs of the rule are not expected to result in a significant market impact, regardless of whether they are passed on to the purchaser or absorbed by the firms.

E. What are the benefits?

The final standards are projected to achieve 2 tons of reductions in HAP through the applicability of lower leak detection and repair thresholds. In addition, we anticipate some unquantified amount of HAP emissions reduction at some formerly exempt site remediations as a result of additional monitoring of PRDs. In addition, any future remediation activities initiated at the formerly exempt existing site remediations or site remediations constructed in the future will include the required levels of HAP emissions control. To the extent facilities newly subject to the NESHAP must revise their CAA monitoring, recordkeeping and reporting, we anticipate improved data and information with respect to air emissions at these facilities. We have not quantified the monetary benefits associated with the amendments; however, the avoided emissions will result in improvements in air quality and reduced negative health effects associated with exposure to air pollution from these emissions.

F. What analysis of environmental justice did we conduct?

Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms; specifically, minority populations (people of color and/or Indigenous peoples) and low-income populations (59 FR 7629, February 16, 1994). Additionally, Executive Order 13985 is intended to advance racial equity and support underserved communities through Federal Government actions (86 FR 7009, January 25, 2021). The EPA defines environmental justice (EJ) as ''the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.'' The EPA further defines fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.'' In recognizing that people of color and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution. Consistent with EPA's commitment to integrating EJ in the Agency's actions, and following the directives set forth in multiple Executive Orders, the Agency has carefully considered the impacts of this action on communities with EJ concerns.

To examine the potential for any EJ concerns that might be associated with site remediation facilities that are affected by removing these exemptions, we performed a demographic analysis, which is an assessment of individual demographic groups of the populations living within 5 kilometers (km) and 50 km of the facilities. The EPA then compared the data from this analysis to the national average for each of the demographic groups.

The results show that for populations within 5 km of the 74 existing facilities, the following demographic groups were above the national average: African American (15 percent versus 12 percent nationally), Hispanic/Latino (21 percent versus 19 percent nationally), Other/Multiracial (16 percent versus 8 percent nationally), people living below the poverty level (16 percent versus 13 percent nationally), over 25 without a high school diploma (14 percent versus 12 percent nationally) and linguistic isolation (7 percent versus 5 percent nationally).

The results show that for populations within 50 km of the 74 existing facilities, the following demographic groups were above the national average: African American (15 percent versus 12 percent nationally), Hispanic/Latino (21 percent versus 19 percent nationally), Other/Multiracial (12 percent versus 8 percent nationally), over 25 without a high school diploma (13 percent versus 12 percent nationally) and linguistic isolation (7 percent versus 5 percent nationally). The average percentage of the population living within 50km of the 74 facilities that is living below the poverty level is equal to the national average (13 percent). However, we note that half of the facilities (34 facilities) have populations within 50km that are above the national average for poverty.

A summary of the proximity demographic assessment performed is included as Table 2. The methodology and the results of the demographic analysis are presented in a technical report, ''Analysis of Demographic Factors for Populations Living Near Site Remediation Facilities,'' available in the docket for this action (Docket ID EPA–HQ–OAR–2002–0021).

TABLE 2—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS FOR SITE REMEDIATION FACILITIES

Demographic group	Nationwide	Population within 50 km of 74 facilities	Population within 5 km of 74 facilities
Total Population	328,016,242	90,083,099	2,763,629
	Race and Ethnicity by Percent (Number of facilities above national average percentage for demographic)		
White	60	51% (44)	48% (48)
African American	12	15% (33)	15% (24)
Native American	0.7	0.3% (13)	0.3% (14)
Hispanic or Latino (includes white and nonwhite)	19	21% (18)	21% (19)
Other and Multiracial	8	12% (17)	16% (24)
	Income by Percent (Number of facilities above national average percentage for demographic)		
Below Poverty Level	13	13% (36)	16% (34)
Above Poverty Level	87%	87% (38)	84% (40)
	Education by Percent		

TABLE 2—PROXIMITY DEMOGRAPHIC ASSESSMENT RESULTS FOR SITE REMEDIATION FACILITIES—Continued

Demographic group	Nationwide	Population within 50 km of 74 facilities	Population within 5 km of 74 facilities
	(Number of facilities above national average percentage for demographic)		
Over 25 and without a High School Diploma	12	13% (32)	14% (31)
Over 25 and with a High School Diploma	88	87% (42)	86% (43)
	Linguistically Isolated by Percent (Number of facilities above national average percentage for demographic)		
Linguistically Isolated	5	7% (19)	7% (13)

Notes:

• The nationwide population count and all demographic percentages are based on the Census' 2015–2019 American Community Survey five-year block group averages and include Puerto Rico. Demographic percentages based on different averages may differ. The total population counts within 5 km and 50 km of all facilities are based on the 2010 Decennial Census block populations.

• To avoid double counting, the "Hispanic or Latino" category is treated as a distinct demographic category for these analyses. A person is identified as one of five racial/ethnic categories above: White, African American, Native American, Other and Multiracial, or Hispanic/Latino. A person who identifies as Hispanic or Latino is counted as Hispanic/Latino for this analysis, regardless of what race this person may have also identified as in the Census.

The EPA investigated the risk for exempt sources in parallel to the risk assessment for the affected sources of the category (Docket ID No. EPA–HQ–OAR–2018– 0833). The maximum individual risk for cancer was 4-in-1 million for actual emissions and for maximum allowable emissions. The hazard indices for noncancer risks were well below 1 (0.3 for actual and maximum allowable emissions). The regulatory changes to this NESHAP (subpart GGGGG) discussed in section III.A of this action will further the effort to improve human health impacts for populations in these demographic groups.

Among the 13 facilities for which we anticipate this action will result in a reduction of HAP emissions, the area within 5km of at least seven of the facilities exceeds the national average for at least one racial/ethnicity demographic, the area within 5km of at least six facilities exceeds the national average for ''People Living Below the Poverty Level'', and the area within 5km of at least five facilities exceeds the national average for ''Greater than or equal to 25 years of age without a High School Diploma.'' The changes will provide additional health protection for all populations, including for people of color, low-income, and indigenous communities living near these sources.

V. Statutory and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review because it raises novel legal and policy issues. Any changes made in response to OMB recommendations have been documented in the docket.

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2062.10. OMB Control Number 2060–0534. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here. The information collection requirements are not enforceable until OMB approves them. To check whether the ICR for this action is approved, please consult *Reginfo.gov* at *https://www.reginfo.gov/public/do/PRASearch,* and search using OMB Control Number 2060–0534. OMB typically reviews ICR packages within sixty days of a final notice.

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

Respondents/affected entities: Unlike a specific industry sector or type of business, the respondents potentially affected by this ICR cannot be easily or definitively identified. Potentially, the Site Remediation NESHAP may be applicable to any type of business or facility at which a site remediation is conducted to clean up media contaminated with organic HAP when the remediation activities are performed, the authority under which the remediation activities are performed, and the magnitude of the HAP in the remediation material meets the applicability criteria specified in the rule. A site remediation that is subject to this rule potentially may be conducted at any type of privately-owned or government-owned facility at which contamination has occurred due to past events or current activities at the facility. For site remediation performed at sites where the facility has been abandoned and there is no owner, a government agency takes responsibility for the cleanup.

Respondent's obligation to respond: Mandatory (42 U.S.C. 7414).

Estimated number of respondents: 104 total for the source category, of which 74 are estimated to become respondents as a result of this final action.

Frequency of response: Semiannual.

Total estimated burden: 42,945 total hours (per year) for the source category, of which 24,068 hours are estimated as a result of this final action. Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $3.1 million total (per year) for the source category, of which approximately $2.7 million is estimated as a result of this final action. This includes $250,000 total annualized capital or operation and maintenance costs for the source category, of which $146,000 is estimated as a result of this final action.

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 the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The final amendments to the Site Remediation NESHAP are estimated to affect 74 facilities. Of these 74 facilities, 19 are owned by the Federal Government, which is not a small entity. The remaining 55 facilities are owned by 46 firms, and the Agency has determined that one of these can be classified as a small entity using the Small Business Administration size standards for their respective industries. The small entity subject to the requirements of this action is a small business. The Agency has determined that one small business may experience an impact of less than 0.1% of revenues in one year. Details of this analysis are presented in the memorandum, "Economic Impact Analysis for Site Remediation NESHAP Amendments: Final Report," which is available in the docket for this action (Docket ID No. EPA–HQ–OAR–2002–0021).

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector, the cost does not exceed $100 million or more.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. Because the proposed rule amendments would result in reduced emissions of HAP and reduced risk to anyone exposed, the EPA believes that the proposed rule amendments would provide additional protection to children. More information on the source category's risk can be found in section IV of the preamble published on September 13, 2019 (84 FR 46138). The complete risk analysis results and the details concerning its development are presented in the memorandum entitled "Residual Risk Assessment for the Site Remediation Source Category in Support of the 2019 Risk and Technology Review Proposed Rule," available in the docket (Docket ID No. EPA–HQ–OAR–2018– 0833).

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

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Additional technological controls are not anticipated due to this action and no increased energy use is expected.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations (people of color and/or Indigenous peoples) and low-income populations as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The results of our demographic analysis show that the percentages of people of color, low-income populations and/or indigenous peoples who live within 5 km of the 74 existing facilities are slightly (2 or 3 percent) or moderately higher (8 percent) than the national average: African American (15 percent versus 12 percent nationally), Hispanic/Latino (21 percent versus 19 percent nationally), Other/Multiracial (16 percent versus 8 percent nationally), people living below the poverty level (16 percent versus 13 percent nationally), over 25 without a high school diploma (14 percent versus 12 percent nationally) and linguistic isolation (7 percent versus 5 percent nationally). The small level of emission reductions is unlikely to affect the risk borne by these populations in a measurable amount. The reductions of 2 tons of HAP per year plus an unquantifiable amount due to the remainder of the NESHAP provisions discussed in section IV.B are not enough to be reliably quantified with respect to risk or impact. While the quantity of HAP reductions is small, directionally the final amendments increase the level of protection provided to human health and the environment by regulating site remediations previously exempt from the Site Remediation NESHAP.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

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

Michael S. Regan,

Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency amends title 40, chapter I, of the Code of Federal Regulations (CFR) 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.*

Subpart GGGGG—National Emission Standards for Hazardous Air Pollutants: Site Remediation

§ 63.7881 [Amended]

■ 2. Section 63.7881 is amended by removing and reserving paragraphs (b)(2) and (3).

■ 3. Section 63.7882 is amended by adding paragraph (d) to read as follows:

§ 63.7882 What site remediation sources at my facility does this subpart affect?

* * * * *

(d) Notwithstanding paragraphs (b) and (c) of this section:

(1) Each affected source for your site is considered an existing source if your site remediation commenced construction or reconstruction under the authority of the Comprehensive Environmental Response and Compensation Liability Act (CERCLA) as a remedial action or a non-time-critical removal action on or before May 13, 2016.

(2) Each affected source for your site is considered an existing source if your site remediation commenced construction or reconstruction under a Resource Conservation and Recovery Act (RCRA) corrective action conducted at a treatment, storage, and disposal facility (TSDF) that is either required by your permit issued by either the U.S. Environmental Protection Agency (EPA) or a state program authorized by the EPA under RCRA section 3006; required by orders authorized under RCRA; or required by orders authorized under RCRA section 7003 on or before May 13, 2016.

(3) Each affected source for your site is considered a new source if your site remediation commenced construction or reconstruction under the authority of CERCLA as a remedial action or a non-time-critical removal action after May 13, 2016.

(4) Each affected source for your site is considered a new source if your site remediation commenced construction or reconstruction under a RCRA corrective action conducted at a TSDF that is either required by your permit issued by either the U.S. Environmental Protection Agency (EPA) or a State program authorized by the EPA under RCRA section 3006; required by orders authorized under RCRA; or required by orders authorized under RCRA section 7003 after May 13, 2016.

■ 4. Section 63.7883 is amended by adding paragraph (g) to read as follows:

§ 63.7883 When do I have to comply with this subpart?

* * * * *

(g) Notwithstanding paragraphs (a) through (f) of this section, the following dates for compliance apply to sources identified in § 63.7882(d):

(1) Site remediations identified in § 63.7882(d)(1) and (2) must comply with the requirements of this subpart that apply to you no later than June 24, 2024.

(2) Site remediations identified in § 63.7882(d)(3) and (4) must comply with the requirements of this subpart that apply to you no later than December 22, 2022, or upon initial startup, whichever is later.

[FR Doc. 2022–27523 Filed 12–21–22; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[EPA–HQ–OPP–2022–0189; FRL–10458–01–OCSPP]

Iron Oxide (Fe_3O_4) in Pesticide Formulations Applied to Animals; Tolerance Exemption

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes an exemption from the requirement of a tolerance for residues of iron oxide (Fe_3O_4) (CAS Reg. No. 1317–61–9) when used as an inert ingredient (colorant) in pesticide formulations applied to animals. The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service submitted a petition (IN–11661) to EPA under the Federal Food, Drug, and Cosmetic Act (FFDCA), requesting establishment of an exemption from the requirement of a tolerance. This regulation eliminates the need to establish a maximum permissible level for residues of iron oxide (Fe_3O_4), when used in accordance with the terms of that exemption.

DATES: This regulation is effective December 22, 2022. Objections and requests for hearings must be received on or before February 21, 2023 and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the **SUPPLEMENTARY INFORMATION**).

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA–HQ–OPP–2022–0189, is available at *https://www.regulations.gov* or at the Office of Pesticide Programs Regulatory Public Docket (OPP Docket) in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW, Washington, DC 20460–0001. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room and the OPP docket is (202) 566–1744. For the latest status information on EPA/DC services, docket access, visit *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: Daniel Rosenblatt, Registration Division (7505T), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; main telephone number: (202) 506–2875; email address: *RDFRNotices@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).
- Food manufacturing (NAICS code 311).
- Pesticide manufacturing (NAICS code 32532).

B. How can I get electronic access to other related information?

You may access a frequently updated electronic version of 40 CFR part 180 through the Office of the Federal Register's e-CFR site at *https://www.ecfr.gov/current/*title-40.

C. How can I file an objection or hearing request?

Under FFDCA section 408(g), 21 U.S.C. 346a(g), any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket ID number EPA–HQ–OPP–2022–0189 in the subject line on the first page of your submission. All objections and requests for a hearing must be in writing and must be received

13, 2023. The safety zone will be enforced for all navigable waters of the Lower Mississippi River, New Orleans, LA from MM 94 to MM 95. In the event of inclement weather, the safety zone will be enforced from 7:30 to 8:45 p.m. on April 14, 2023. During the enforcement period, as reflected in § 165.845 paragraphs (a) through (d), entry into this zone is prohibited to all vessels and persons except vessels authorized by the COTP or designated representative. A designated representative means any Coast Guard commissioned, warrant, or petty officer of the U.S. Coast Guard assigned to units under the operational control of Sector New Orleans. Persons and vessels requiring entry into this safety zone must request permission from the COTP or a designated representative. They may be contacted on VHF–FM Channel 16 or 67 or by telephone at (504) 365–2545. Persons and vessels permitted to enter this safety zone must transit at their slowest safe speed and comply with all lawful directions issued by the COTP or the designated representative.

In addition to this notification of enforcement in the **Federal Register**, the Coast Guard plans to provide notification of this enforcement period via Marine Safety Information Bulletin and Broadcast Notice to Mariners.

Dated: March 22, 2023.

K.K. Denning,

Captain, U.S. Coast Guard, Captain of the Port Sector New Orleans.

[FR Doc. 2023–06460 Filed 3–28–23; 8:45 am]

BILLING CODE 9110–04–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51, 60, and 63

[EPA–HQ–OAR–2020–0556; FRL–8335–02–OAR]

RIN 2060–AV35

Testing Provisions for Air Emission Sources

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates corrections and updates to regulations for source testing of emissions under various rules. This final rule includes corrections to typographical and technical errors, updates to outdated procedures, and revisions to add clarity and consistency with other monitoring requirements. The revisions will improve the quality of data but will not impose new substantive requirements on source owners or operators.

DATES: This rule is effective on May 30, 2023. The incorporation by reference of certain material listed in the rule is approved by the Director of the Federal Register on May 30, 2023. The incorporation by reference of certain other material listed in the rule was approved by the Director of the Federal Register as of March 18, 2008, April 16, 2012, and May 15, 2015.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2020–0556. All documents in the docket are listed on the *www.regulations.gov* website. Although listed in the index, some information is not publicly available, *e.g.,* confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy. Publicly available docket materials are available electronically through *www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Mrs. Lula H. Melton, Office of Air Quality Planning and Standards, Air Quality Assessment Division (E143–02), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–2910; fax number: (919) 541–0516; email address: *melton.lula@epa.gov*.

SUPPLEMENTARY INFORMATION: The supplementary information in this preamble is organized as follows:

I. General Information
- A. Does this action apply to me?
- B. What action is the agency taking?
- C. Judicial Review

II. Background
III. Incorporation by Reference
IV. Summary of Amendments
- A. Method 201A of Appendix M of Part 51
- B. General Provisions (Subpart A) of Part 60
- C. Standards of Performance for New Residential Wood Heaters (Subpart AAA) of Part 60
- D. Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters, and Forced-Air Furnaces (Subpart QQQQ) of Part 60
- E. Method 1 of Appendix A–1 of Part 60
- F. Method 4 of Appendix A–3 of Part 60
- G. Method 7 of Appendix A–4 of Part 60
- H. Method 19 of Appendix A–7 of Part 60
- I. Method 25 of Appendix A–7 of Part 60
- J. Method 25C of Appendix A–7 of Part 60
- K. Method 26 of Appendix A–8 of Part 60
- L. Performance Specification 1 of Appendix B of Part 60
- M. Performance Specification 2 of Appendix B of Part 60
- N. Performance Specification 4B of Appendix B of Part 60
- O. Performance Specification 6 of Appendix B of Part 60
- P. Performance Specification 12A of Appendix B of Part 60
- Q. Performance Specification 16 of Appendix B of Part 60
- R. Procedure 1 of Appendix F of Part 60
- S. Procedure 5 of Appendix F of Part 60
- T. General Provisions (Subpart A) of Part 63
- U. National Emission Standards for Hazardous Air Pollutants From the Pulp and Paper Industry (Subpart S) of Part 63
- V. National Emission Standards for Hazardous Air Pollutants From Hazardous Waste Combustors (Subpart EEE) of Part 63
- W. National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating (Subpart JJJJ) of Part 63
- X. National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ) of Part 63
- Y. National Emission Standards for Hazardous Air Pollutants: Engine Test Cells/Stands Residual Risk and Technology Review (Subpart PPPPP) of Part 63
- Z. National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (Subpart UUUUU) of Part 63
- AA. Method 315 of Appendix A of Part 63
- BB. Method 323 of Appendix A of Part 63

V. Public Comments on the Proposed Rule
VI. Statutory and Executive Order Reviews
- A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act (PRA)
- C. Regulatory Flexibility Act (RFA)
- D. Unfunded Mandates Reform Act (UMRA)
- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
- G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
- H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use
- I. National Technology Transfer and Advancement Act and 1 CFR Part 51
- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
- K. Congressional Review Act (CRA)

I. General Information

A. Does this action apply to me?

The amendments promulgated in this final rule apply to industries that are subject to the current provisions of 40 CFR parts 51, 60, and 63. We did not list all the specific affected industries or their North American Industry Classification System (NAICS) codes herein since there are many affected

sources in numerous NAICS categories. If you have any questions regarding the applicability of this action to a particular entity, consult either the air permitting authority for the entity or your EPA Regional representative as listed in 40 CFR 63.13.

B. What action is the agency taking?

We are promulgating corrections and revisions to source test methods, performance specifications (PS), and associated regulations. The revisions correct typographical and technical errors, provide updates to testing procedures, and add clarity and consistency among monitoring requirements.

C. Judicial Review

Under section 307(b)(1) of the Clean Air Act (CAA), judicial review of this final rule is available by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit by May 30, 2023. Under section 307(d)(7)(B) of the CAA, only an objection to this final rule that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the CAA, the requirements that are the subject of this final rule may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

II. Background

The EPA catalogs errors and corrections, as well as necessary revisions to test methods, performance specifications, and associated regulations in 40 CFR parts 51, 60, and 63 and periodically updates and revises these provisions. The most recent updates and revisions were proposed on April 26, 2022 (87 FR 24488). The public comment period for the present proposed revisions ended June 27, 2022, and 11 comment letters were received from the public. This final rule was developed based on public comments that the agency received on the proposed rule.

III. Incorporation by Reference

The EPA is incorporating by reference two ASTM International (ASTM) standards. Specifically, the EPA has incorporated ASTM D6216–20, which covers the procedure for certifying continuous opacity monitors and includes design and performance specifications, test procedures, and quality assurance (QA) requirements to ensure that continuous opacity monitors meet minimum design and calibration requirements necessary for accurate opacity monitoring measurements in regulatory environmental opacity monitoring applications subject to 10 percent or higher opacity standards. The EPA also updated the incorporation by reference for ASTM D6784, a test method for elemental, oxidized, particle-bound, and total mercury in emissions from stationary sources, from the 2002 version to the 2016 version. This update applies to incorporations by reference in 40 CFR part 60, appendix B, Performance Specification 12A for continuous monitoring of mercury emissions. The EPA updated the incorporations by reference in 40 CFR part 63 for use of ASTM D6784 under table 5 and appendix A of Subpart UUUUU, for mercury emissions measurement and monitoring. Both the ASTM D6216–20 and ASTM D6784–16 standards were developed and adopted by the ASTM International. The ASTM standards may be obtained from *www.astm.org* or from the ASTM at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959.

The EPA also is incorporating by reference the Standard Methods Committee Method 5210 Biochemical Oxygen Demand (BOD) from ''Standard Methods for the Examination of Waste and Wastewater.'' This standard is acceptable as an alternative to method 405.1 and is available from the Standards Method Committee at *www.standardmethods.org* or by telephone at (844) 232–3707.

The EPA also made specific modifications to requirements in an existing incorporation by reference, the ASTM E2515–11 test method. The stipulations modify the post-test leak check procedures as well as add procedures for performing leak checks during a sampling run.

The following standards are already currently incorporated in the location where they appear in the rule: ANSI/ASME PTC 19.10–1981, ASTM–D6348–03. ASTM–D6348–03(R2010), ASTM–D6522–00 (2005).

IV. Summary of Amendments

A. Method 201A of Appendix M of Part 51

In method 201A, the erroneous equation 25 in section 12.5 is corrected.

B. General Provisions (Subpart A) of Part 60

In the General Provisions of part 60, § 60.17(h) is revised to add ASTM D6216–20 and D6784–16 to the list of incorporations by reference and to re-number the remaining consensus standards that are incorporated by reference in alpha-numeric order.

C. Standards of Performance for New Residential Wood Heaters (Subpart AAA) of Part 60

Subpart AAA is amended to add stipulations for use of the ASTM E2515–11 test method. The stipulations modify the post-test leak check procedures as well as add procedures for performing leak checks during a sampling run. The stipulations to ASTM E2515–11 are necessary as we have learned that the quality assurance/quality control (QA/QC) requirements for leak tests required by ASTM E2515–11, section 9.6.5.1 are not sufficient to provide assurance of the sampling system integrity. Additionally, the language of ASTM E2515–11, section 9.6.5.1 currently allows for averaging the particulate matter (PM) results from a non-leaking sampling system with those from a leaking sampling system, which effectively reduces reported PM emissions by as much as half, rendering the test method inappropriate for compliance determination.

We revised the language in § 60.534(c) and developed new language to replace ASTM E2515–11, section 9.6.5.1 by adding § 60.534(c)(1), which specifies appropriate post-test leak check procedures and in § 60.534(c)(2) by adding procedures for performing leak checks during a sampling run. These modifications bring appropriate QA/QC requirements to PM measurements required by the rule and eliminate opportunity for emissions test results to be considered valid when a leaking sampling system allows dilution of the PM sample(s). This language was amended slightly based on comments received to further clarify that sample volume collected during the process of conducting leak checks during a test run is not to be included in the overall sampling volume as it would dilute the collected sample volume were it treated in that manner.

In § 60.534(d), the first hour PM emissions measurements are to be conducted using a separate ASTM E2515–11 sampling train operated concurrently with the paired ASTM E2515–11 sampling trains used in compliance PM sampling. In this manner, the first hour PM emissions will be collected appropriately, and the compliance test measurements will not be impacted by a sampling pause for filter replacement at the 1-hour mark.

The regulatory language in § 60.539b(b) is revised to include General Provisions that were added to § 60.8(f)(2) (81 FR 59801, August 30, 2016) and were inadvertently exempted from inclusion in subpart AAA as that rule, as promulgated in 2015, exempted

§ 60.8(f) in its entirety. The exemption promulgated in subpart AAA at § 60.539b(b) was intended to exempt those affected sources from § 60.8(f), which, at the time, consisted of what is now currently § 60.8(f)(1) and is specific to compliance testing results consisting of the arithmetic mean of three replicate tests. These modifications will ensure that emissions test reporting includes all data necessary to assess and assure the quality of the reported emissions data and appropriately describes and identifies the specific unit covered by the emissions test report. Since compliance tests in this category consist of a single test, the original regulatory exemption to the General Provisions of § 60.8(f)(1) is retained.

D. Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters, and Forced-Air Furnaces (Subpart QQQQ) of Part 60

The erroneous PM emission limits in g/MJ in § 60.5474(b)(2), (3) and (6) are corrected.

In addition, subpart QQQQ is amended to add stipulations for use of the ASTM E2515–11 test method. The stipulations modify the post-test leak check procedures as well as add procedures for performing leak checks during a sampling run. The stipulations to ASTM E2515–11 are necessary as we have learned that the QA/QC requirements for leak tests required by ASTM E2515–11, section 9.6.5.1 are not sufficient to provide assurance of the sampling system integrity. Additionally, the language of ASTM E2515–11, section 9.6.5.1 currently allows for averaging the PM results from a non-leaking sampling system with those from a leaking sampling system, which effectively reduces reported PM emissions by as much as half, rendering the test method inappropriate for compliance determination. The language in § 60.5476(c)(5) and (6) is removed and the paragraphs are reserved.

We revised the language in § 60.5476(f) and developed new language to replace ASTM E2515–11, section 9.6.5.1 by adding § 60.5476(f)(1), which specifies appropriate post-test leak check procedures and in § 60.5476(f)(2) by adding procedures for performing leak checks during a sampling run. These modifications bring appropriate QA/QC requirements to PM measurements required by the rule and eliminate opportunity for emissions test results to be considered valid when a leaking sampling system allows dilution of the PM sample(s). This language was amended slightly based on comments received to further clarify that sample volume collected during the process of conducting leak checks during a test run should not be included in the overall sampling volume as it would dilute the collected sample volume were it treated in that manner.

In § 60.5476(f), we are also requiring that first hour PM emissions measurements be conducted using a separate ASTM E2515–11 sampling train operated concurrently with the paired ASTM E2515–11 sampling trains used in compliance PM sampling. In this manner, the first hour PM emissions will be collected appropriately, and the compliance test measurements will not be impacted by a sampling pause for filter replacement at the one-hour mark. In § 60.5476(f), we incorporated language about filter type and size acceptance currently in § 60.5476(c)(5). Additionally, we removed language relating to EN 303–5 currently found in § 60.5476(f).

The regulatory language in § 60.5483(b) is revised to include General Provisions that were added to § 60.8(f)(2) (81 FR 59801, August 30, 2016) and were inadvertently exempted from subpart QQQQ as that rule, as promulgated in 2015, exempted § 60.8(f) in its entirety. The exemption promulgated in subpart QQQQ at § 60.5483(b) was intended for those affected sources subject to § 60.8(f), which, at the time, consisted of what is currently § 60.8(f)(1) and is specific to compliance testing results consisting of the arithmetic mean of three replicate tests. These modifications ensure that emissions test reporting includes all data necessary to assess and assure the quality of the reported emissions data and appropriately describes and identifies the specific unit covered by the emissions test report. Since compliance tests in this category consist of a single test, the original regulatory exemption to the General Provisions of § 60.8(f)(1) is retained.

In subpart QQQQ, in method 28WHH, in section 13.8, the erroneous CO calculation instructions for equation 23 are corrected to include the summation of CO emissions over four test categories instead of three.

E. Method 1 of Appendix A–1 of Part 60

In method 1, the heading in section 11.5.1 is moved to 11.5, and the word ''procedure'' is moved to the first sentence in section 11.5.1 for clarity. Section 11.5.2 is revised to clearly specify the number of traverse points that must be used for sampling and velocity measurements once a directional flow-sensing probe procedure has been used to demonstrate that an alternative measurement site is acceptable. The last sentence of section 11.5.2, which appears unclear as to what ''same traverse point number and locations'' it is referring, is revised to instead specify the ''same minimum of 40 traverse points for circular ducts and 42 points for rectangular ducts'' that are used in the alternative measurement procedure of section 11.5.3.

Also, table 1–2 is revised to correct the erroneous requirement that calls for 99.9 percent of stack diameter from the inside wall to the traverse point to 98.9 percent.

F. Method 4 of Appendix A–3 of Part 60

In method 4, table 4–3 is formatted correctly.

G. Method 7 of Appendix A–4 of Part 60

In method 7, section 10.1.3 is revised to change the word ''should'' to ''shall'' in the last sentence because the difference between the calculated concentration values and the actual concentrations are required to be less than 7 percent for all standards.

H. Method 19 of Appendix A–7 of Part 60

In method 19, the erroneous equation 19–5 is corrected.

I. Method 25 of Appendix A–7 of Part 60

In method 25, a record and report section (section 12.9) was added to confirm that the quality control (QC) is successfully performed. Also, the erroneous figure 25–6 is corrected.

J. Method 25C of Appendix A–7 of Part 60

In method 25C, in response to a comment, the first sentence in section 9.1 is corrected to read, ''If the 3-year average annual rainfall is greater than 20 inches, verify that landfill gas sample contains less than 20 percent N_2 or 5 percent O_2.'' Also, the nomenclature in section 12.1 for C_{N2} and C_{mN2} is revised to provide clarity. More specifically, C_{N2} is changed from ''N_2 concentration in the diluted sample gas'' to ''N_2 concentration in the landfill gas sample,'' and the C_{mN2} is changed from ''Measured N_2 concentration, fraction in landfill gas'' to ''Measured N_2 concentration, diluted landfill gas sample.''

K. Method 26 of Appendix A–8 of Part 60

In method 26, erroneous equations 26–4 and 26–5 in sections 12.4 and 12.5, respectively, are revised to be consistent with the nomenclature in section 12.1.

L. Performance Specification 1 of Appendix B of Part 60

In Performance Specification 1, references to ASTM D6216–12 (in sections 2.1, 3.1, 6.1, 8.1(1), (2)(iii), and (3)(ii), 8.2(1) through (3), 9.0, 12.1, 13.1, 13.2, and 16.0, reference 8) are replaced with ASTM D6216–20. Note: If the initial certification of the continuous opacity monitoring system (COMS) has already occurred using D6216–98, D6216–03, D6216–07, or D6216–12, it will not be necessary to recertify using D6216–20.

Also, in Performance Specification 1, section 8.1(2)(iii) is revised by removing the next to the last sentence, which reads, ''The opacities of the two locations or paths may be measured at different times but must represent the same process operating conditions,'' because the statement is confusing and unclear; furthermore, it is unlikely that one would achieve the same conditions at two different times.

M. Performance Specification 2 of Appendix B of Part 60

In Performance Specification 2, in section 8.3.3, a sentence is added to clarify that during a calibration, the reference gas is to be introduced into the sampling system prior to any sample conditioning or filtration equipment and must pass through as much of the probe as is practical. In section 12.5, minor revisions are made to clarify that relative accuracy (RA) test results are expressed as a percent of emission rate or concentration (units of the applicable standard) and the definition of the average reference method (RM) value for Equation 2–6.

N. Performance Specification 4B of Appendix B of Part 60

The entire Performance Specification 4B is updated to the Environmental Monitoring Management Council (EMMC) methods format used for all other performance specifications. In response to comment, some of the references to other sections are replaced with text.

O. Performance Specification 6 of Appendix B of Part 60

In Performance Specification 6, section 13.2 is revised to specifically state the relative accuracy criteria including significant figures. On October 7, 2020 (85 FR 63394), we revised section 13.2 of Performance Specification 6 to make the relative accuracy calculations and criteria consistent with Performance Specification 2 and offer an alternate calculation and criterion for low emission concentration/rate situations; however, we neglected to specifically cite the alternate relative accuracy criterion from Performance Specification 2 for low emission sources and to ensure consistency with Performance Specification 2 with regard to significant figures in the relative accuracy criteria. In response to comment, we are adding ''you may elect to'' to the last sentence in section 13.2 to clarify that the 10% RA is an option as opposed to a requirement.

P. Performance Specification 12A of Appendix B of Part 60

We are revising the references (in sections 8.4.2, 8.4.4, 8.4.5, 8.4.6.1, and 17.5 and the footnote to Figure 12A–3) to ASTM D6784, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), to update them from the 2002 version to the latest version, which was authorized in 2016.

The capabilities of mercury CEMS have improved since initial deployment to support regulations over a decade ago. Therefore, we are revising section 13.3 to modify the alternative relative accuracy criterion such that: (1) it applies only at mercury concentrations less than 2.5 μg/scm and (2) the difference between the average reference method and CEMS values added to the confidence coefficient is now 0.5 μg/scm. This revised criterion is consistent with revisions that we made to the mercury monitoring requirements in 40 CFR part 63, subpart UUUUU (81 FR 20172, April 6, 2016).

Q. Performance Specification 16 of Appendix B of Part 60

In Performance Specification 16, several corrections and modifications are made to clarify the intent of the requirements. In section 1.1, the language is revised to make it clear that if a PEMS (predictive emission monitoring system) contains a diluent component, then the diluent component must be tested as well. Also, in section 1.1, the language referring to PS–17 is removed because PS–17 was not promulgated.

In sections 3.11 and 3.12, language is added to define commonly used acronyms, and in section 3.12, the language is corrected to indicate that the relative accuracy test audit (RATA) is to be conducted as specified in section 8.2.

In section 9.1, the QA/QC Summary chart is corrected to reflect the language found in section 2.2, which indicates that the relative accuracy audit (RAA) is required on all PEMS and not just those classified as compliance PEMS. The QA/QC Summary Chart is also modified to align the criteria for a RAA with that found in section 13.5.

In section 9.4, we proposed to correct the language stating a RATA is to be conducted at the normal operating level to indicate the RATA is to be conducted as specified in section 8.2. Also in section 9.4, we proposed to remove the statement that the statistical tests in section 8.3 are not required for the yearly RATA. However, based on public comment, we are not making any revisions to section 9.4 at this time.

In section 12.3.2, we proposed to remove the alternative criteria language because it does not apply to F-factor determinations. However, based on public comment, we have decided not to make changes to section 12.3.2 at this time.

In sections 13.1 and 13.5, the language is modified to add the corresponding alternative criteria in units of lb/mmBtu. Although, we did not propose a change in the criteria for applying the 2 ppm difference in the proposed rule, we agree with a public comment that the 20 ppm criteria in section 13.5 should be the same as the 10 ppm criteria in section 13.1, so section 13.5 is revised to reflect this.

R. Procedure 1 of Appendix F of Part 60

In Procedure 1, in section 4.1, a sentence is added to clarify that during a calibration, the reference gas is to be introduced into the sampling system prior to any sample conditioning or filtration equipment and must pass through as much of the probe as is practical. Section 5.2.3(2) is modified to refine the alternative cylinder gas audit (CGA) criteria in response to the use of analyzers with lower span values. In section 6.2, to provide clarity and clear up any confusion, the language referring to the relevant performance specification is removed, and the language referring to the use of equation 1–1 is inserted.

S. Procedure 5 of Appendix F of Part 60

Regulated entities have pointed out that we did not include criteria for the system integrity check required in Procedure 5. In section 2.5, we clarified that ongoing daily calibration of the Hg CEMS must be conducted using elemental mercury reference gas. This is consistent with revisions that we made to the Hg monitoring requirements in 40 CFR part 63, subpart UUUUU (81 FR 20172, April 6, 2016). We revised the title of section 4.0 and added section 4.4 to explain more explicitly the procedure for conducting the system integrity check as well as to provide the criteria for passing the check. In response to

comment, we changed ''calendar'' days to ''operating'' days in the first sentence in section 4.4 to provide harmonization with the Mercury Air Toxics Standards (MATS) Rule (40 CFR part 63, subpart UUUUU). Also, in response to comment, we revised the acceptance criteria for the system integrity check in section 4.4 to better comport with the MATS Rule. The acceptance criteria for the system integrity check now reads ''The absolute value of the difference between the Hg CEMS output response and the reference gas must be less than or equal to 10.0 percent of the reference gas value or 0.8 μg/scm.''

In section 5.1.3, to add clarity, we inserted language referring to equation 1–1 of Procedure 1 for calculating relative accuracy.

T. General Provisions (Subpart A) of Part 63

In the General Provisions of part 63, § 63.14 is revised to: (1) add ASTM D6784–16 to paragraph (h) and (2) add ''Standard Methods for the Examination of Waste and Wastewater'' method 5210 to paragraph (u).

U. National Emission Standards for Hazardous Air Pollutants From the Pulp and Paper Industry (Subpart S) of Part 63

In subpart S, the existing reference in 40 CFR 63.457(c)(4) to method 405.1 of part 136 of chapter 40 for the measurement of biochemical oxygen demand (BOD) is no longer valid, as method 405.1 was withdrawn in 2007. It was replaced with Biochemical Oxygen Demand Standard Methods 5210 B (72 FR 11199, March 12, 2007), which has been previously approved in test plans for measuring BOD to demonstrate compliance with the requirements of subpart S. In § 63.457(c)(4), the reference to method 405.1 is replaced with reference to method 5210B. The parent method, method 5210, which includes method 5210B, is also incorporated by reference in 40 CFR 63.14.

V. National Emission Standards for Hazardous Air Pollutants From Hazardous Waste Combustors (Subpart EEE) of Part 63

In the appendix to subpart EEE, the erroneous language regarding an Interference Response Test in the introductory paragraph of section 5 is removed, and section 5.3 in its entirety is removed.

W. National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating (Subpart JJJJ) of Part 63

In 2009, revisions were made to § 63.3360(e)(1)(viii) to clarify that the results of method 25 or method 25A were being used to determine ''total organic volatile matter'' (85 FR 41276). At the time, the use of the terminology ''total gaseous non-methane organic volatile organic matter'' in § 63.3360(e)(1)(vi) was overlooked. We are revising § 63.3360(e)(1)(vi) by removing the term ''non-methane'' to be consistent with § 63.3360(e)(1)(viii).

X. National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ) of Part 63

We have received multiple inquiries regarding the requirements in table 4 of Subpart ZZZZ that are used to measure the exhaust gas moisture when measuring the concentration of carbon monoxide (CO), formaldehyde, or total hydrocarbon (THC) to demonstrate compliance with the rule. It was first pointed out that it is not always necessary to measure that exhaust gas moisture when measuring CO. We are adding language to all three sections of table 4 stating that that the moisture measurement is only necessary when needed to correct the CO, formaldehyde, THC and/or O_2 measurements to a dry basis.

Y. National Emission Standards for Hazardous Air Pollutants: Engine Test Cells/Stands Residual Risk and Technology Review (Subpart PPPPP) of Part 63

In subpart PPPPP, the existing erroneous statement in § 63.9306(d)(2)(iv) is corrected to read, ''Using a pressure sensor with measurement sensitivity of 0.002 inches water, check gauge calibration quarterly and transducer calibration monthly.'' Also, in subpart PPPPP, the existing erroneous statement in § 63.9322(a)(1) is corrected to read, ''The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a permanent total enclosure (PE) and directs all the exhaust gases from the enclosure to an add-on control device.''

Z. National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (Subpart UUUUU) of Part 63

We are revising the references in sections 4.1.1.5 and 4.1.1.5.1 in subpart UUUUU, appendix A, to ASTM Method D6784, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), to update them from the 2002 version to the latest version, which was authorized in 2016. In table 5, we are adding ASTM Method D6784–16 as a mercury testing option as it was inadvertently left out previously.

AA. Method 315 of Appendix A of Part 63

Section 16.2 is mislabeled as section 6.2 and is corrected.

BB. Method 323 of Appendix A of Part 63

In method 323, sections 10.1 and 10.3 are revised to require best laboratory practices. The nomenclature in section 12.1 is revised to include ''b,'' which is the intercept of the calibration curve at zero concentration and revise K_c. These additions are necessary because equation 323–5 in section 12.6 is revised to reflect changes in calibration procedures for calculating the mass of formaldehyde.

V. Public Comments on the Proposed Rule

Eleven comment letters were received from the public on the proposed rule. The public comments and the agency's responses are summarized in the Response to Comments document located in the docket for this rule. See the **ADDRESSES** section of this preamble.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA. The amendments to test methods, performance specifications, and testing regulations only make corrections, updates, and clarifications to existing testing methodology.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities

under the RFA. This action will not impose any requirements on small entities. This final rule will not impose emission measurement requirements beyond those specified in the current regulations, nor does it change any emission standard.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications, as specified in Executive Order 13175. This action corrects and updates existing testing regulations. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

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

This action is not subject to Executive Order 13211 because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act and 1 CFR Part 51

This action involves technical standards. The EPA used ASTM D6216–20 for continuous opacity monitors in Performance Specification 1. The ASTM D6216–20 standard covers the procedure for certifying continuous opacity monitors and includes design and performance specifications, test procedures, and QA requirements to ensure that continuous opacity monitors meet minimum design and calibration requirements, necessary in part, for accurate opacity monitoring measurements in regulatory environmental opacity monitoring applications subject to 10 percent or higher opacity standards. The EPA also updated the version of ASTM D6784, a test method for elemental, oxidized, particle-bound, and total mercury in emissions from stationary sources, from the 2002 to 2016 version in the references contained in 40 CFR part 60, appendix B, Performance Specification 12A, for continuous monitoring of mercury emissions. The EPA updated the version of ASTM D6784 referenced in table 5 and appendix A of subpart UUUUU in 40 CFR part 63, for mercury emissions measurement and monitoring.

The EPA also used the Standard Methods Committee Method 5210 Biochemical Oxygen Demand (BOD) from ''Standard Methods for the Examination of Water and Wastewater.'' Section B of this standard, 5-day BOD, is acceptable as an alternative to method 405.1.

The EPA added language to correct a portion of the ASTM E2515–11 test method. The stipulations modified the post-test leak check procedures as well as added procedures for performing leak checks during a sampling run. The stipulations to ASTM E2515–11 are necessary as we have learned that the quality assurance/quality control (QA/QC) requirements for leak tests required by ASTM E2515–11, section 9.6.5.1 are not sufficient to provide assurance of the sampling system integrity. Additionally, the language of ASTM E2515–11, section 9.6.5.1 currently allows for averaging the PM results from a non-leaking sampling system with those from a leaking sampling system which effectively reduces reported PM emissions by as much as half, rendering the test method inappropriate for compliance determination.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations (people of color) and low-income populations.

The EPA believes that this type of action does not concern human health or environmental conditions and, therefore, cannot be evaluated with respect to potentially disproportionate and adverse effects on people of color, low-income populations and/or indigenous peoples because it does not establish an environmental health or safety standard. This action corrects, updates, and provides clarity to existing testing regulations.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each house of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 51

Environmental protection, Air pollution control, Performance specifications, Test methods and procedures.

40 CFR Part 60

Environmental protection, Air pollution control, Incorporation by reference, Performance specifications, Test methods and procedures.

40 CFR Part 63

Environmental protection, Air pollution control, Incorporation by reference, Performance specifications, Test methods and procedures.

Michael S. Regan,

Administrator.

For the reasons set forth in the preamble, the Environmental Protection Agency amends title 40, chapter I of the Code of Federal Regulations as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

■ 1. The authority citation for part 51 continues to read as follows:

Authority: 23 U.S.C. 101; 42 U.S.C. 7401–7671q.

■ 2. Amend appendix M to part 51 in section 12.5 of method 201A by revising equation 25 to read as follows:

Appendix M to Part 51—Recommended Test Methods for State Implementation Plans

* * * * *

Method 201A—Determination of PM_{10} and $PM_{2.5}$ Emissions From Stationary Sources (Constant Sampling Rate Procedure)

* * * * *

12.0 Calculations and Data Analysis

* * * * *

12.5 * * *

$$\Delta p_s = \Delta p_m \left[\frac{C_p'}{C_p}\right]^2 \quad \text{(Eq. 25)}$$

* * * * *

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 3. The authority citation of part 60 continues to read as follows:

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

Subpart A—General Provisions

■ 4. Amend § 60.17 by:

■ a. Revising paragraphs (h)(182) and (195);

■ b. Redesignating paragraphs (h)(196) through (217) as paragraphs (h)(197) through (218) respectively; and

■ c. Adding new paragraph (h)(196).

The revisions and addition read as follows:

§ 60.17 Incorporations by reference.

* * * * *

(h) * * *

(182) ASTM D6216–20, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, approved September 1, 2020; IBR approved for appendix B to part 60.

* * * * *

(195) ASTM D6784–02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), approved April 1, 2008; IBR approved for § 60.56c(b).

(196) ASTM D6784–16, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), approved March 1, 2016; IBR approved for appendix B to part 60.

* * * * *

Subpart AAA—Standards of Performance for New Residential Wood Heaters

■ 5. Amend § 60.534 by revising paragraphs (c) and (d) to read as follows:

§ 60.534 What test methods and procedures must I use to determine compliance with the standards and requirements for certification?

* * * * *

(c) For affected wood heaters subject to the 2015 and 2020 particulate matter emission standards specified in § 60.532(a) through (c), particulate matter emission concentrations must be measured with ASTM E2515–11 (IBR, see § 60.17) with the following exceptions: eliminate section 9.6.5.1 of ASTM E2515–11 and perform the post-test leak checks as described in paragraph (c)(1) of this section. Additionally, if a component change of either sampling train is needed during sampling, then perform the leak check specified in paragraph (c)(2) of this section. Four-inch filters and Teflon membrane filters or Teflon-coated glass fiber filters may be used in ASTM E2515–11.

(1) *Post-test leak check.* A leak check of each sampling train is mandatory at the conclusion of each sampling run before sample recovery. The leak check must be performed in accordance with the procedures of ASTM E2515–11, section 9.6.4.1 (IBR, see § 60.17), except that it must be conducted at a vacuum equal to or greater than the maximum value reached during the sampling run. If the leakage rate is found to be no greater than 0.0003 m^3/min (0.01 cfm) or 4% of the average sampling rate (whichever is less), the leak check results are acceptable. If a higher leakage rate is obtained, the sampling run is invalid.

(2) *Leak checks during sample run.* If, during a sampling run, a component (*e.g.,* filter assembly) change becomes necessary, a leak check must be conducted immediately before the change is made. Record the sample volume before and after the leak test. The sample volume collected during any leak checks must not be included in the total sample volume for the test run. The leak check must be done according to the procedure outlined in ASTM E2515–11, section 9.6.4.1 (IBR, see § 60.17), except that it must be done at a vacuum equal to or greater than the maximum value recorded up to that point in the sampling run. If the leakage rate is found to be no greater than 0.0003 m^3/min (0.01 cfm) or 4% of the average sampling rate (whichever is less), the leak check results are acceptable. If a higher leakage rate is obtained, the sampling run is invalid.

Note 1 to paragraph (c): Immediately after component changes, leak checks are optional but highly recommended. If such leak checks are done, the procedure in paragraph (c)(1) of this section should be used.

(d) For all tests conducted using ASTM E2515–11 (IBR, see § 60.17), with the exceptions described in paragraphs (c)(1) and (2) of this section, and pursuant to this section, the manufacturer and approved test laboratory must also measure the first hour of particulate matter emissions for each test run by sampling with a third, identical and independent sampling train operated concurrently for the first hour of PM paired train compliance testing according to paragraph (c) of this section. The manufacturer and approved test laboratory must report the test results from this third train separately as the first hour emissions.

* * * * *

■ 6. Amend § 60.539b by revising paragraph (b) to read as follows:

§ 60.539b What parts of the General Provisions do not apply to me?

* * * * *

(b) Section 60.8(a), (c), (d), (e), (f)(1), and (g);

* * * * *

Subpart QQQQ—Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces

■ 7. Amend § 60.5474 by revising paragraphs (b)(2), (3), and (6) to read as follows:

§ 60.5474 What standards and requirements must I meet and by when?

* * * * *

(b) * * *

(2) 2020 residential hydronic heater particulate matter emission limit: 0.10 lb/mmBtu (0.043 g/MJ) heat output per individual burn rate as determined by the crib wood test methods and procedures in § 60.5476 or an alternative crib wood test method approved by the Administrator.

(3) 2020 residential hydronic heater cord wood alternative compliance option for particulate matter emission limit: 0.15 lb/mmBtu (0.064 g/MJ) heat output per individual burn rate as determined by the cord wood test methods and procedures in § 60.5476 or an alternative cord wood test method approved by the Administrator.

* * * * *

(6) 2020 forced-air furnace particulate matter emission limit: 0.15 lb/mmBtu (0.064 g/MJ) heat output per individual burn rate as determined by the cord wood test methods and procedures in § 60.5476 or cord wood test methods approved by the Administrator.

* * * * *

■ 8. Amend § 60.5476 by:

■ a. Removing paragraphs (c)(5) and (6); and
■ b. Revising paragraph (f).
The revision reads as follows:

§ 60.5476 What test methods and procedures must I use to determine compliance with the standards and requirements for certification?

* * * * *

(f) For affected wood heaters subject to the particulate matter emission standards, particulate matter emission concentrations must be measured with ASTM E2515–11 (IBR, see § 60.17) with the following exceptions, eliminate section 9.6.5.1 of ASTM E2515–11 and perform the post-test leak checks as described in paragraph (f)(1) of this section. Additionally, if a component change of either sampling train is needed during sampling, then perform the leak check specified in paragraph (f)(2) of this section. Four-inch filters and Teflon membrane filters or Teflon-coated glass fiber filters may be used in ASTM E2515–11. For all tests conducted using ASTM 2515–11, with the exceptions described in paragraphs (f)(1) and (2) of this section, the manufacturer and approved test laboratory must also measure the first hour of particulate matter emissions for each test run by sampling with a third, identical and independent sampling train operated concurrently with the first hour of PM paired train compliance testing. The manufacturer and approved test laboratory must report the test results for this third train separately as the first hour emissions.

(1) *Post-test leak check.* A leak check of each sampling train is mandatory at the conclusion of each sampling run before sample recovery. The leak check must be performed in accordance with the procedures of ASTM E2515–11, section 9.6.4.1 (IBR, see § 60.17), except that it must be conducted at a vacuum equal to or greater than the maximum value reached during the sampling run. If the leakage rate is found to be no greater than 0.0003 m^3/min (0.01 cfm) or 4% of the average sampling rate (whichever is less), the leak check results are acceptable. If a higher leakage rate is obtained, the sampling run is invalid.

(2) *Leak checks during sample run.* If, during a sampling run, a component (*e.g.,* filter assembly) change becomes necessary, a leak check must be conducted immediately before the change is made. Record the sample volume before and after the leak test. The sample volume collected during any leak checks must not be included in the total sample volume for the test run. The leak check must be done according to the procedure outlined in ASTM E2515–11, section 9.6.4.1 (IBR, see § 60.17), except that it must be done at a vacuum equal to or greater than the maximum value recorded up to that point in the sampling run. If the leakage rate is found to be no greater than 0.0003 m^3/min (0.01 cfm) or 4% of the average sampling rate (whichever is less), the leak check results are acceptable. If a higher leakage rate is obtained, the sampling run is invalid.

Note 1 to paragraph (f): Immediately after component changes, leak checks are optional but highly recommended. If such leak checks are done, the procedure in paragraph (f)(1) of this section should be used.

* * * * *

■ 9. Amend § 60.5483 by revising paragraph (b) to read as follows:

§ 60.5483 What parts of the General Provisions do not apply to me?

* * * * *

(b) Section 60.8(a), (c), (d), (e), (f)(1), and (g);

* * * * *

■ 10. Amend appendix A–1 to part 60 by revising sections 11.5, 11.5.1, and 11.5.2, and table 1–2 under the heading ''17.0 Tables, Diagrams, Flowcharts, and Validation Data'' in method 1 to read as follows:

Appendix A–1 to Part 60—Test Methods 1 Through 2F

* * * * *

Method 1—Sample and Velocity Traverses for Stationary Sources

* * * * *

11.0 Procedure

* * * * *

11.5 Alternative Measurement Site Selection Procedure. The alternative site selection procedure may be used to determine the rotation angles in lieu of the procedure outlined in section 11.4 of this method.

11.5.1 This alternative procedure applies to sources where measurement locations are less than 2 equivalent or duct diameters downstream or less than one-half duct diameter upstream from a flow disturbance. The alternative should be limited to ducts larger than 24 inches in diameter where blockage and wall effects are minimal. A directional flow-sensing probe is used to measure pitch and yaw angles of the gas flow at 40 or more traverse points; the resultant angle is calculated and compared with acceptable criteria for mean and standard deviation.

Note: Both the pitch and yaw angles are measured from a line passing through the traverse point and parallel to the stack axis. The pitch angle is the angle of the gas flow component in the plane that INCLUDES the traverse line and is parallel to the stack axis. The yaw angle is the angle of the gas flow component in the plane PERPENDICULAR to the traverse line at the traverse point and is measured from the line passing through the traverse point and parallel to the stack axis.

11.5.2 Traverse Points. Use a minimum of 40 traverse points for circular ducts and 42 points for rectangular ducts for the gas flow angle determinations. Follow the procedure outlined in section 11.3 and table 1–1 or 1–2 of this method for the location and layout of the traverse points. If the alternative measurement location is determined to be acceptable according to the criteria in this alternative procedure, use the same minimum of 40 traverse points for circular ducts and 42 points for rectangular ducts that were used in the alternative measurement procedure for future sampling and velocity measurements.

* * * * *

17.0 Tables, Diagrams, Flowcharts, and Validation Data

* * * * *

TABLE 1–2—LOCATION OF TRAVERSE POINTS IN CIRCULAR STACKS

[Percent of stack diameter from inside wall to traverse point]

Traverse point number on a diameter	Number of traverse points on a diameter											
	2	4	6	8	10	12	14	16	18	20	22	24
1	14.6	6.7	4.4	3.2	2.6	2.1	1.8	1.6	1.4	1.3	1.1	1.1
2	85.4	25.0	14.6	10.5	8.2	6.7	5.7	4.9	4.4	3.9	3.5	3.2
3		75.0	29.6	19.4	14.6	11.8	9.9	8.5	7.5	6.7	6.0	5.5
4		93.3	70.4	32.3	22.6	17.7	14.6	12.5	10.9	9.7	8.7	7.9
5			85.4	67.7	34.2	25.0	20.1	16.9	14.6	12.9	11.6	10.5
6			95.6	80.6	65.8	35.6	26.9	22.0	18.8	16.5	14.6	13.2
7				89.5	77.4	64.4	36.6	28.3	23.6	20.4	18.0	16.1
8				96.8	85.4	75.0	63.4	37.5	29.6	25.0	21.8	19.4
9					91.8	82.3	73.1	62.5	38.2	30.6	26.2	23.0
10					97.4	88.2	79.9	71.7	61.8	38.8	31.5	27.2
11						93.3	85.4	78.0	70.4	61.2	39.3	32.3

TABLE 1–2—LOCATION OF TRAVERSE POINTS IN CIRCULAR STACKS—Continued

[Percent of stack diameter from inside wall to traverse point]

Traverse point number on a diameter	Number of traverse points on a diameter											
	2	4	6	8	10	12	14	16	18	20	22	24
12						97.9	90.1	83.1	76.4	69.4	60.7	39.8
13							94.3	87.5	81.2	75.0	68.5	60.2
14							98.2	91.5	85.4	79.6	73.8	67.7
15								95.1	89.1	83.5	78.2	72.8
16								98.4	92.5	87.1	82.0	77.0
17									95.6	90.3	85.4	80.6
18									98.6	93.3	88.4	83.9
19										96.1	91.3	86.8
20										98.7	94.0	89.5
21											96.5	92.1
22											98.9	94.5
23												96.8
24												98.9

* * * * *

■ 11. Amend appendix A–3 to part 60 by revising figure 4–3 under the heading ''18.0 Tables, Diagrams, Flowcharts, and Validation Data'' in method 4 to read as follows:

Appendix A–3 to Part 60—Test Methods 4 Through 5I

* * * * *

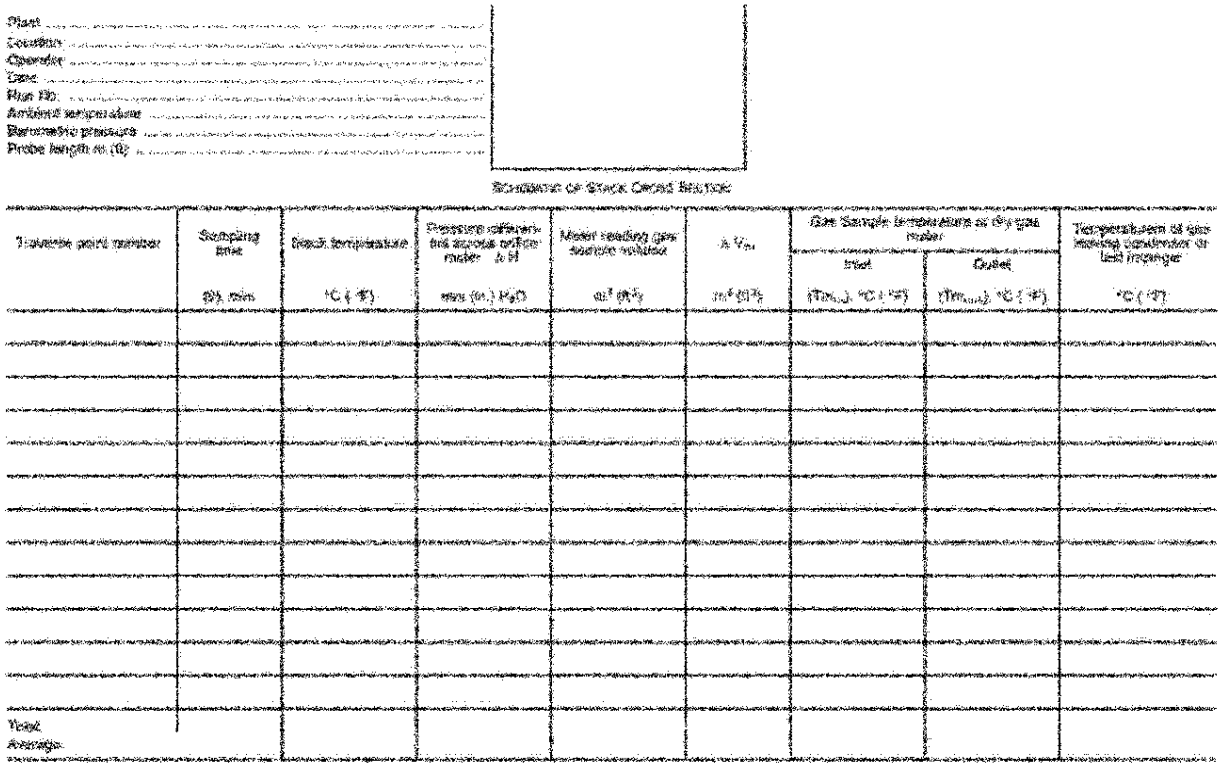
Method 4—Determination of Moisture Content in Stack Gases

* * * * *

18.0 Tables, Diagrams, Flowcharts, and Validation Data

* * * * *

Figure 4–3 Moisture Field Data Sheet



* * * * *

■ 12. Amend appendix A–4 to part 60 by revising section 10.1.3 in method 7 to read as follows:

Appendix A–4 to Part 60—Test Methods 6 Through 10B

* * * * *

Method 7—Determination of Nitrogen Oxide Emissions From Stationary Sources

* * * * *

10.0 Calibration and Standardization

* * * * *

10.1.3 Spectrophotometer Calibration Quality Control. Multiply the absorbance value obtained for each standard by the K_c factor (reciprocal of the least squares slope) to determine the distance each calibration point lies from the theoretical calibration line. The difference between the calculated concentration values and the actual concentrations (*i.e.,* 100, 200, 300, and 400 µg NO_2) shall be less than 7 percent for all standards.

* * * * *

■ 13. Amend appendix A–7 to part 60 by:

■ a. Revising equation 19–5 in section 12.2.3.2 in method 19;

■ b. In method 25:

■ i. Adding sections 12.9 and 12.9.1 through 12.9.16; and

■ ii. Revising figure 25–6 under the heading ''17.0 Tables, Diagrams, Flowcharts, and Validation Data''; and

■ c. In method 25C:

■ i. Revising section 9.1; and

■ ii. Revising the entries ''C_{N2}'' and ''C_{mN2}'' in section 12.1.

The revisions and additions read as follows:

Appendix A–7 to Part 60—Test Methods 19 Through 25E

* * * * *

Method 19—Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates

* * * * *

12.0 Data Analysis and Calculations

* * * * *

12.2.3.2 * * *

$$E = C_d F_d \frac{20.9}{20.9 - \frac{\%O_{2w}}{1 - B_{ws}}} \qquad \text{Eq. 19-5}$$

* * * * *

Method 25—Determination of Total Gaseous Nonmethane Organic Emissions as Carbon

* * * * *

12.0 Data Analysis and Calculations

* * * * *

12.9 Record and Report Initial Method Checks as follows:

12.9.1 Calibration and Linearity Check Gas Certifications (sections 7.2 and 7.4 of this method).

12.9.2 Condensate Trap Blank Check (section 8.1.1 of this method).

12.9.3 Pretest Leak-Check (section 8.1.4 of this method).

12.9.4 Condensate Recovery Apparatus (section 10.1.1 of this method).

12.9.5 Carrier Gas and Auxiliary O_2 Blank Check (section 10.1.1.1 of this method).

12.9.6 Oxidation Catalyst Efficiency Check (section 10.1.1.2 of this method).

12.9.7 System Performance Check (section 10.1.1.3 of this method).

12.9.8 Oxidation Catalyst Efficiency Check (section 10.1.2.1 of this method).

12.9.9 Reduction Catalyst Efficiency Check (section 10.1.2.2 of this method).

12.9.10 NMO Analyzer Linearity Check Calibration (section 10.1.2.3 of this method).

12.9.11 NMO Analyzer Daily Calibration (section 10.2 of this method).

12.9.12 Condensate Recovery (section 11.1 of this method).

12.9.13 Daily Performance Checks (section 11.1.1 of this method).

12.9.14 Leak-Check (section 11.1.1.1 of this method).

12.9.15 System Background Test (section 11.1.1.2 of this method).

12.9.16 Oxidation Catalyst Efficiency Check (section 11.1.1.3 of this method).

* * * * *

17.0 Tables, Diagrams, Flowcharts, and Validation Data

* * * * *

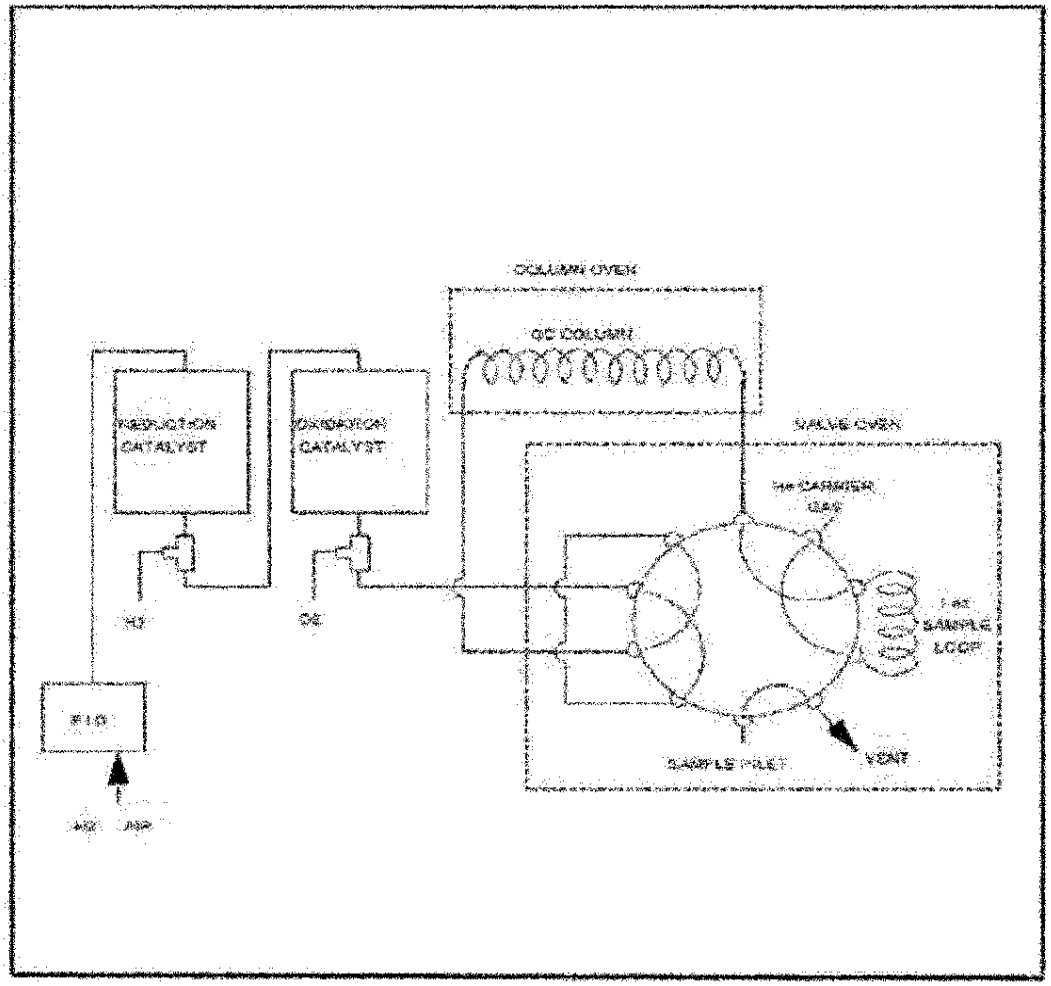


Figure 25–6. Nonmethane Organic Analyzer (NMO)

* * * * *

Method 25C—Determination of Nonmethane Organic Compounds (NMOC) in Landfill Gases

* * * * *

9.0 Quality Control

9.1 Miscellaneous Quality Control Measures.

Section	Quality control measure	Effect
8.4.2	Verify that landfill gas sample contains less than 20 percent N_2 or 5 percent O_2. Landfills with 3-year average annual rainfalls equal to or less than 20 inches annual rainfalls samples are acceptable when the N_2 to O_2 concentration ratio is greater than 3.71.	Ensures that ambient air was not drawn into the landfill gas sample and gas was sampled from an appropriate location.
10.1, 10.2	NMOC analyzer initial and daily performance checks	Ensures precision of analytical results.

* * * * *

12.0 Data Analysis and Calculations

* * * * *

12.1 Nomenclature

* * * * *

C_{N2} = N_2 concentration in the landfill gas sample.

C_{mN2} = Measured N_2 concentration, diluted landfill gas sample.

* * * * *

■ 14. Amend appendix A–8 to part 60 by:

■ a. Revising sections 12.4 and 12.5 in method 26.

■ b. Revising section 13.8 in test method 28WHH.

The revisions read as follows:

Appendix A–8 to Part 60—Test Methods 26 Through 30B

* * * * *

Method 26—Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Non-Isokinetic Method

* * * * *

12.0 Data Analysis and Calculations

* * * * *

12.4 Total µg HCl, HBr, or HF Per Sample.

$$m_{HX} = K_{HCl,HBr,HF} V_s (S_{x^-} - B_{x^-}) \quad \text{Eq. 26-4}$$

12.5 Total μg Cl_2 or Br_2 Per Sample.

$$m_{x2} = V_s(S_{x^-} - B_{x^-}) \text{ Eq. 26-5}$$

* * * * *

Test Method 28—WHH for Measurement of Particulate Emissions and Heating Efficiency of Wood-Fired Hydronic Heating Appliances

* * * * *

13.0 Calculation of Results

* * * * *

$$CO_{g/min} = Q_{std} \cdot CO_c \cdot 3.30 \times 10^{-5} \quad \text{Eq. 23}$$

Total CO emissions for each of the four test periods ($CO_{_1}$, $CO_{_2}$, $CO_{_3}$, $CO_{_4}$) shall be calculated as the sum of the emissions rates for each of the 1-minute intervals. Total CO emissions for the test run, CO_T, shall be calculated as the sum of $CO_{_1}$, $CO_{_2}$, $CO_{_3}$ and $CO_{_4}$.

* * * * *

■ 15. Amend appendix B to part 60 by:
■ a. Revising sections 2.1, 3.1, 6.1, 8.1(1), (2)(iii), and (3)(ii), 8.2(1) through (3), 9.0, 12.1, 13.1, 13.2, and 16.0, reference 8, in performance specification 1;
■ b. Revising sections 8.3.3 and 12.5 in performance specification 2;
■ c. Revising performance specification 4B;
■ d. Revising section 13.2 in performance specification 6;
■ e. Revising sections 8.4.2, 8.4.4, 8.4.5, 8.4.6.1, 13.3, and 17.5, and figure 12A–3 in section 18 in performance specification 12A; and
■ f. Revising sections 1.1, 3.11, 3.12, 9.1, 13.1, and 13.5 in performance specification 16.

The revisions read as follows:

Appendix B to Part 60—Performance Specifications

* * * * *

Performance Specification 1—Specifications and Test Procedures for Continuous Opacity Monitoring Systems in Stationary Sources

* * * * *

2.0 What are the basic requirements of PS–1?

* * * * *

2.1 ASTM D6216–20 (IBR, see § 60.17) is the reference for design specifications, manufacturer's performance specifications, and test procedures. The opacity monitor manufacturer must periodically select and test an opacity monitor, that is representative of a group of monitors produced during a specified period or lot, for conformance with the design specifications in ASTM D6216–20. The opacity monitor manufacturer must test each opacity monitor for conformance with the manufacturer's performance specifications in ASTM D6216–20. *Note:* If the initial certification of the opacity monitor occurred before May 30, 2023, using D6216–98, D6216–03, D6216–07, or D6216–12, it is not necessary to recertify using D6216–20.

* * * * *

3.0 What special definitions apply to PS–1?

3.1 All definitions and discussions from section 3 of ASTM D6216–20 are applicable to PS–1.

* * * * *

6.0 What equipment and supplies do I need?

6.1 *Continuous Opacity Monitoring System.* You, as owner or operator, are responsible for purchasing an opacity monitor that meets the specifications of ASTM D6216–20, including a suitable data recorder or automated data acquisition handling system. Example data recorders include an analog strip chart recorder or more appropriately an electronic data acquisition and reporting system with an input signal range compatible with the analyzer output.

* * * * *

8.0 What performance procedures are required to comply with PS–1?

* * * * *

8.1 * * *

(1) You must purchase an opacity monitor that complies with ASTM D6216–20 and obtain a certificate of conformance from the opacity monitor manufacturer.

(2) * * *

(iii) Alternative Locations and Light Beam Paths. You may select locations and light beam paths, other than those cited in section 8.1(2)(ii) of this method, if you demonstrate, to the satisfaction of the Administrator or delegated agent, that the average opacity measured at the alternative location or path is equivalent to the opacity as measured at a location meeting the criteria of sections 8.1(2)(i) and (ii) of this method. The opacity at the alternative location is considered equivalent if (1) the average opacity value measured at the alternative location is within ±10 percent of the average opacity value measured at the location meeting the installation criteria, and (2) the difference between any two average opacity values is less than 2 percent opacity (absolute). You use the following procedure to conduct this demonstration: simultaneously measure the opacities at the two locations or paths for a minimum period of time (*e.g.,* 180-minutes) covering the range of normal operating conditions and compare the results. You may use alternative procedures for determining acceptable locations if those procedures are approved by the Administrator.

(3) * * *

(ii) Calibration Error Check. Conduct a three-point calibration error test using three calibration attenuators that produce outlet pathlength corrected, single-pass opacity values shown in ASTM D6216–20, section 7.5. If your applicable limit is less than 10 percent opacity, use attenuators as described in ASTM D6216–20, section 7.5 for applicable standards of 10 to 19 percent opacity. Confirm the external audit device produces the proper zero value on the COMS data recorder. Separately, insert each calibration attenuators (low, mid, and high-level) into the external audit device. While inserting each attenuator, (1) ensure that the entire light beam passes through the attenuator, (2) minimize interference from reflected light, and (3) leave the attenuator in place for at least two times the shortest recording interval on the COMS data recorder. Make a total of five nonconsecutive readings for each attenuator. At the end of the test, correlate each attenuator insertion to the corresponding value from the data recorder. Subtract the single-pass calibration attenuator values corrected to the stack exit conditions from the COMS responses. Calculate the arithmetic mean difference, standard deviation, and confidence coefficient of the five measurements value using equations 1–3, 1–4, and 1–5 of this method. Calculate the calibration error as the sum of the absolute value of the mean difference and the 95 percent confidence coefficient for each of the three test attenuators using equation 1–6 of this method. Report the calibration error test results for each of the three attenuators.

* * * * *

8.2 * * *

(1) Conduct the verification procedures for design specifications in section 6 of ASTM D6216–20.

(2) Conduct the verification procedures for performance specifications in section 7 of ASTM D6216–20.

(3) Provide to the owner or operator a report of the opacity monitor's conformance to the design and performance specifications required in sections 6 and 7 of ASTM D6216–20 in accordance with the reporting requirements of section 9 in ASTM D6216–20.

9.0 What quality control measures are required by PS–1?

Opacity monitor manufacturers must initiate a quality program following the requirements of ASTM D6216–20, section 8. The quality program must include (1) a quality system and (2) a corrective action program.

* * * * *

13.8 Carbon Monoxide Emissions

For each minute of the test period, the carbon monoxide emissions rate (g/min) shall be calculated as:

12.0 What calculations are needed for PS–1?

12.1 Desired Attenuator Values. Calculate the desired attenuator value corrected to the emission outlet pathlength as follows:

$$OP_2 = 1 - (1 - OP_1)^{\frac{L_2}{L_1}} \quad \text{Eq. 1-1}$$

Where:

OP_1 = Nominal opacity value of required low-, mid-, or high-range calibration attenuators.

OP_2 = Desired attenuator opacity value from ASTM D6216–20, section 7.5 at the opacity limit required by the applicable subpart of this part.

L_1 = Monitoring pathlength.

L_2 = Emission outlet pathlength.

* * * * *

13.0 What specifications does a COMS have to meet for certification?

* * * * *

13.1 Design Specifications. The opacity monitoring equipment must comply with the design specifications of ASTM D6216–20.

13.2 Manufacturer's Performance Specifications. The opacity monitor must comply with the manufacturer's performance specifications of ASTM D6216–20.

* * * * *

16.0 Which references are relevant to this method?

* * * * *

8. ASTM D6216–20: Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications. American Society for Testing and Materials (ASTM). September 2020.

* * * * *

Performance Specification 2—Specifications and Test Procedures for SO_2 and NO_x Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

8.0 Performance Specification Test Procedure

* * * * *

8.3.3 Conduct the CD test at the two points specified in section 6.1.2 of this method. Introduce to the CEMS the reference gases, gas cells, or optical filters (these need not be certified). When using reference gases, introduce the reference gas prior to any sample conditioning or filtration equipment and ensure that it passes through all filters, scrubbers, conditioners, and other monitor components used during normal sampling. The reference gas should pass through as much of the sampling probe as practical. Record the CEMS response and subtract this value from the reference value (see example data sheet in figure 2–1 of this method).

* * * * *

12.0 Calculations and Data Analysis

* * * * *

12.5 Relative Accuracy. Calculate the RA, expressed as a percentage, of a set of data as follows:

$$RA = \frac{[|\bar{d}| + |CC|]}{\overline{RM}} \times 100 \qquad Eq. 2-6$$

Where:

$|\bar{d}|$ = Absolute value of the mean differences (from equation 2–3 of this method).

$|CC|$ = Absolute value of the confidence coefficient (from equation 2–3 of this method).

$\overline{RM}$ = Average RM value. In cases where the average emissions for the test are less than 50 percent of the applicable emission standard, substitute the applicable emission standard value in the denominator of equation 2–6 of this method in place of the average RM value. In all other cases, use $\overline{RM}$.

* * * * *

Performance Specification 4B—Specifications and Test Procedures for Carbon Monoxide and Oxygen Continuous Monitoring Systems in Stationary Sources

1.0 Scope and Application

1.1. Analytes.

Analyte	CAS No.
Carbon Monoxide (CO)	630–08–0
Oxygen (O_2)	7782–44–7

1.2. Applicability.

1.2.1. This specification is to be used for evaluating the acceptability of carbon monoxide (CO) and oxygen (O_2) continuous emission monitoring systems (CEMS) at the time of or soon after installation and whenever specified in this part. The CEMS may include, for certain stationary sources, (a) flow monitoring equipment to allow measurement of the dry volume of stack effluent sampled, and (b) an automatic sampling system.

1.2.2. This specification is not designed to evaluate the installed CEMS' performance over an extended period of time, nor does it identify specific calibration techniques and auxiliary procedures to assess the CEMS' performance. The source owner or operator, however, is responsible to properly calibrate, maintain, and operate the CEMS. To evaluate the CEMS' performance, the Administrator may require, under section 114 of the Act, the operator to conduct CEMS performance evaluations at times other than the initial test.

1.2.3. The definitions, installation, and measurement location specifications, test procedures, data reduction procedures, reporting requirements, and bibliography are the same as in Performance Specification (PS) 3 (for O_2) and PS 4A (for CO) of this appendix except as otherwise noted in this specification.

2.0 Summary of Performance Specification

Installation and measurement location specifications, performance specifications, test procedures, and data reduction procedures are included in this specification. Reference method tests, calibration error tests, calibration drift tests, and interferant tests are conducted to determine conformance of the CEMS with the specification.

3.0 Definitions

The definitions are the same as in section 3.0 of PS 2 with the following definitions added:

3.1. *Continuous Emission Monitoring System (CEMS).* This definition is the same as section 3.0 of PS 2 with the following addition. A continuous monitor is one in which the sample to be analyzed passes the measurement section of the analyzer without interruption.

3.2. *Response Time (RT).* The time interval between the start of a step change in the system input and when the pollutant analyzer output reaches 95 percent of the final value.

3.3. *Calibration Error (CE).* The difference between the concentration indicated by the CEMS and the known concentration generated by a calibration source when the entire CEMS, including the sampling interface is challenged. A CE test procedure is performed to document the accuracy and linearity of the CEMS over the entire measurement range.

4.0 Interferences [Reserved]

5.0 Safety

This performance specification may involve hazardous materials, operations, and equipment. This performance specification may not address all of the safety problems associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicable regulatory limitations prior to performing this performance specification. The CEMS user's manual should be consulted for specific precautions to be taken with regard to the analytical procedures.

6.0 Equipment and Supplies

Same as section 6.0 of PS 2, except for the following:

6.1 Data Recorder Scale. For O_2, same as specified in PS 3, except that the span must be 25 percent. The span of the O_2 may be higher if the O_2 concentration at the sampling point can be greater than 25 percent. For CO, same as specified in PS 4A, except that the low-range span must be 200 ppm and the high range span must be 3000 ppm. In addition, the scale for both CEMS must record all readings within a measurement range with a resolution of 0.5 percent.

7.0 Reagents and Standards

8.0 Sample Collection, Preservation, Storage, and Transport

8.1. Installation and Measurement Location Specifications.

8.1.1. The CEMS Installation. This specification is the same as section 8.1.1 of PS 2 with the following additions. Both the CO and O_2 monitors should be installed at the same general location. If this is not possible, they may be installed at different locations if the effluent gases at both sample locations are not stratified and there is no in-leakage of air between sampling locations.

8.1.2. Measurement Location. Same as section 8.1.2 of PS 2.

8.1.2.1. Point CEMS. The measurement point should be within or centrally located over the centroidal area of the stack or duct cross section.

8.1.2.2. Path CEMS. The effective measurement path should: (1) have at least 70 percent of the path within the inner 50 percent of the stack or duct cross sectional area, or (2) be centrally located over any part of the centroidal area.

8.1.3. Reference Method (RM) Measurement Location and Traverse Points.

This specification is the same as section 8.1.3 of PS 2 with the following additions. When pollutant concentration changes are due solely to diluent leakage and CO and O_2 are simultaneously measured at the same location, one half diameter may be used in place of two equivalent diameters.

8.2 Pretest Preparation. Install the CEMS, prepare the RM test site according to the specifications in section 8.1 of this method, and prepare the CEMS for operation according to the manufacturer's written instructions.

8.3 Stratification Test Procedure. Stratification is defined as the difference in excess of 10 percent between the average concentration in the duct or stack and the concentration at any point more than 1.0 meter from the duct or stack wall. To determine whether effluent stratification exists, a dual probe system should be used to determine the average effluent concentration while measurements at each traverse point are being made. One probe, located at the stack or duct centroid, is used as a stationary reference point to indicate change in the effluent concentration over time. The second probe is used for sampling at the traverse points specified in method 1 in appendix A to this part. The monitoring system samples sequentially at the reference and traverse points throughout the testing period for five minutes at each point.

8.4 Calibration Drift (CD) Test Procedure. Same as section 8.3 in PS 2.

Note: The CE and RT tests must be conducted during the CD test period.

8.5 Calibration Error Test Procedure. Challenge each monitor (both low and high range CO and O_2) with zero gas and EPA Protocol 1 cylinder gases at three measurement points within the ranges specified in table 4B–1 of this method (in section 18.0).

Operate each monitor in its normal sampling mode as nearly as possible. The calibration gas must be injected into the sample system as close to the sampling probe outlet as practical and should pass through all CEMS components used during normal sampling. Challenge the CEMS three non-consecutive times at each measurement point and record the responses. The duration of each gas injection should be sufficient to ensure that the CEMS surfaces are conditioned.

8.6 Response Time Test Procedure. Same as section 8.3 in PS 4A and must be carried out for both the CO and O_2 monitors.

8.7 Relative Accuracy Test Procedure. Sampling Strategy for Reference Method (RM) Tests, Number of RM Tests, and Correlation of RM and CEMS Data are the same as PS 2, sections 8.4.3, 8.4.4, and 8.4.5, respectively.

9.0 Quality Control [Reserved]

10.0 Calibration and Standardization [Reserved]

11.0 Analytical Procedure

Sample collection and analysis are concurrent for this performance specification (see section 8.0 of this method). Refer to the RM for specific analytical procedures.

12.0 Calculation and Data Analysis

Summarize the results on a data sheet as shown in figure 4B–1 of this method (in section 18.0).

Calibration Error (CE) is the average the differences between the instrument response and the certified cylinder gas value for each gas. Calculate the CE results for the CO monitor according to:

$$CE = \left|\frac{d}{FS}\right| \times 100 \qquad \text{Eq. 4B-1}$$

Where:

d = mean difference between the CEMS response and the known reference concentration, and

FS = span value.

The CE for the O_2 monitor is the average percent O_2 difference between the O_2 monitor and the certified cylinder gas value for each gas.

13.0 Method Performance

13.1. Calibration Drift Performance Specification. For O_2, same as specified in PS 3. For CO, the same as specified in PS 4A except that the CEMS calibration must not drift from the reference value of the calibration standard by more than 3 percent of the span value on either the high or low range.

13.2. Calibration Error (CE) Performance Specification. The mean difference between the CEMS and reference values at all three test points (see table 4B–1 of this method) must be no greater than 5 percent of span value for CO monitors and 0.5 percent for O_2 monitors.

13.3. Response Time Performance Specification. The response time for the CO or O_2 monitor must not exceed 240 seconds.

13.4. Relative Accuracy (RA) Performance Specification. For O_2, same as specified in PS 3. For CO, the same as specified in PS 4A.

14.0 Pollution Prevention [Reserved]

15.0 Waste Management [Reserved]

16.0 Alternative Procedure

Alternative RA Procedure. Under some operating conditions, it may not be possible to obtain meaningful results using the RA test procedure. This includes conditions where consistent, very low CO emission or low CO emissions interrupted periodically by short duration, high level spikes are observed. It may be appropriate in these circumstances to waive the RA test and substitute the following procedure.

Conduct a complete CEMS status check following the manufacturer's written instructions. The check should include operation of the light source, signal receiver, timing mechanism functions, data acquisition and data reduction functions, data recorders, mechanically operated functions, sample filters, sample line heaters, moisture traps, and other related functions of the CEMS, as applicable. All parts of the CEMS must be functioning properly before the RA requirement can be waived. The instrument must also successfully pass the CE and CD specifications. Substitution of the alternate procedure requires approval of the Regional Administrator.

17.0 Reference

1. 40 CFR part 266, appendix IX, section 2, "Performance Specifications for Continuous Emission Monitoring Systems."

18.0 Tables, Diagrams, Flowcharts, and Validation Data

TABLE 4B–1—CALIBRATION ERROR CONCENTRATION RANGE

Measurement point	CO low range (ppm)	CO high range (ppm)	O_2 (%)
1	0–40	0–600	0–2
2	60–80	900–1,200	8–10
3	140–160	2,100–2,400	14–16

FIGURE 4B–1—CALIBRATION ERROR DATA SHEET

Run No.	Calibration value	Monitor response	Difference		
			Zero	Mid	High
1—Zero. 2—Mid. 3—High. 4—Mid. 5—Zero. 6—High. 7—Zero. 8—Mid. 9—High.					
Mean Difference =					
Calibration Error =			%	%	%

* * * * *

Performance Specification 6—Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources

* * * * *

13.0 Method Performance

* * * * *

13.2 CERMS Relative Accuracy. Calculate the CERMS Relative Accuracy (RA) expressed as a percentage using equation 2–6 of section 12 of PS 2. The RA of the CERMS shall be no greater than 20.0 percent in terms of the units of the emission standard. If the average emissions for the test are less than 50 percent of the applicable emission standard, you may elect to substitute the applicable emission standard value in the denominator of equation 2–6 in place of the average RM value; in this case, the RA of the CERMS shall be no greater than 10.0 percent consistent with section 13.2 of PS 2.

* * * * *

Performance Specification 12A—Specifications and Test Procedures for Total Vapor Phase Mercury Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

8.0 Performance Specification Test Procedure

* * * * *

8.4.2 Reference Methods (RM). Unless otherwise specified in an applicable subpart of this part, use method 29, method 30A, or method 30B in appendix A–8 to this part or ASTM Method D6784–16 (IBR, see § 60.17) as the RM for Hg concentration. For method 29 and ASTM Method D6784–16 only, the filterable portion of the sample need not be included when making comparisons to the CEMS results. When method 29, method 30B, or ASTM D6784–16 is used, conduct the RM test runs with paired or duplicate sampling systems and use the average of the vapor phase Hg concentrations measured by the two trains. When method 30A is used, paired sampling systems are not required. If the RM and CEMS measure on a different moisture basis, data derived with method 4 in appendix A–3 to this part must also be obtained during the RA test.

* * * * *

8.4.4 Number and Length of RM Test Runs. Conduct a minimum of nine RM test runs. When method 29, method 30B, or ASTM D6784–16 is used, only test runs for which the paired RM trains meet the relative deviation criteria (RD) of this PS must be used in the RA calculations. In addition, for method 29 and ASTM D6784–16, use a minimum sample time of 2 hours and for methods 30A and 30B use a minimum sample time of 30 minutes.

Note: More than nine sets of RM test runs may be performed. If this option is chosen, RM test run results may be excluded so long as the total number of RM test run results used to determine the CEMS RA is greater than or equal to nine. However, all data must be reported including the excluded test run data.

8.4.5 Correlation of RM and CEMS Data. Correlate the CEMS and the RM test data as to the time and duration by first determining from the CEMS final output (the one used for reporting) the integrated average pollutant concentration for each RM test period. Consider system response time, if important, and confirm that the results are on a consistent moisture basis with the RM test. Then, compare each integrated CEMS value against the corresponding RM value. When method 29, method 30B, or ASTM D6784–16 is used, compare each CEMS value against the corresponding average of the paired RM values.

* * * * *

8.4.6.1 When method 29, method 30B, or ASTM D6784–16 is used, outliers are identified through the determination of relative deviation (RD) of the paired RM tests. Data that do not meet the RD criteria must be flagged as a data quality problem and may not be used in the calculation of RA. The primary reason for performing paired RM sampling is to ensure the quality of the RM data. The percent RD of paired data is the parameter used to quantify data quality. Determine RD for paired data points as follows:

$$RD = \frac{|C_a - C_b|}{C_a + C_b} \times 100 \quad \text{(Equation 12A-3)}$$

Where C_a and C_b are the Hg concentration values determined from the paired samples.

* * * * *

13.0 Method Performance

* * * * *

13.3 Relative Accuracy (RA). The RA of the CEMS must be no greater than 20 percent of the mean value of the RM test data in terms of units of µg/scm. Alternatively, if the mean RM is less than 2.5 µg/scm, the results are acceptable if the absolute value of the difference between the mean RM and CEMS values added to the absolute value of the confidence coefficient from equation 12A–7 of this method does not exceed 0.5 µg/scm.

* * * * *

17.0 Bibliography

* * * * *

17.5 ASTM Method D6784–16, ''Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method).''

18.0 Tables and Figures

* * * * *

FIGURE 12A–3—RELATIVE ACCURACY TEST DATA

Run No.	Date	Begin time	End time	RM value (µg/m³)	CEMS value (µg/m³)	Difference (µg/m³)	Run used? (yes/no)	RD[1]
1.								
2.								
3.								
4.								
5.								

FIGURE 12A–3—RELATIVE ACCURACY TEST DATA—Continued

Run No.	Date	Begin time	End time	RM value ($\mu g/m^3$)	CEMS value ($\mu g/m^3$)	Difference ($\mu g/m^3$)	Run used? (yes/no)	RD [1]
6.								
7.								
8.								
9.								
10.								
11.								
12								
Average Values								

Arithmetic Mean Difference:
Standard Deviation:
Confidence Coefficient:
T-Value:
% Relative Accuracy:
$|(RM)_{avg} - (CEMS)_{avg}|$:

[1] Calculate the RD only if paired samples are taken using RM 30B, RM 29, or ASTM D6784–16. Express RD as a percentage or, for very low RM concentrations (≤1.0 $\mu g/m^3$), as the absolute difference between C_a and C_b.

* * * * *

Performance Specification 16—Specifications and Test Procedures for Predictive Emission Monitoring Systems in Stationary Sources

1.0 Scope and Application

1.1 *Does this performance specification apply to me?* If you, the source owner or operator, intend to use (with any necessary approvals) a predictive emission monitoring system (PEMS) to show compliance with your emission limitation under this part or 40 CFR part 61 or 63, you must use the procedures in this performance specification (PS) to determine whether your PEMS is acceptable for use in demonstrating compliance with applicable requirements. Use these procedures to certify your PEMS after initial installation and periodically thereafter to ensure the PEMS is operating properly. If your PEMS contains a diluent (O_2 or CO_2) measuring component, the diluent component must be tested as well. These specifications apply to PEMS that are installed under this part and 40 CFR parts 61 and 63 after May 30, 2023.

* * * * *

3.0 Definitions

* * * * *

3.11 *Relative Accuracy Audit (RAA)* means a quarterly audit of the PEMS against a portable analyzer meeting the requirements of ASTM D6522–00 or a RM for a specified number of runs. A RM may be used in place of the portable analyzer for the RAA.

3.12 *Relative Accuracy Test Audit (RATA)* means a RA test that is performed at least once every four calendar quarters after the initial certification test. The RATA shall be conducted as described in section 8.2 of this method.

* * * * *

9.0 Quality Control

* * * * *

9.1 QA/QC Summary. Conduct the applicable ongoing tests listed in this section.

ONGOING QUALITY ASSURANCE TESTS

Test	PEMS regulatory purpose	Acceptability	Frequency
Sensor Evaluation	All		Daily.
RAA	All	Same as for RA in section 13.5 of this method	Each quarter except quarter when RATA performed.
RATA	All	Same as for RA in section 13.1 of this method	Yearly in quarter when RAA not performed.
Bias Correction	All	If $d_{avg} \leq \|cc\|$	Bias test passed (no correction factor needed).
PEMS Training	All	If $F_{critical} \geq F$, $r \geq 0.8$	Optional after initial and subsequent RATAs.
Sensor Evaluation Alert Test (optional)	All	See section 6.1.8 of this method	After each PEMS training.

* * * * *

13.0 Method Performance

13.1 PEMS Relative Accuracy. The RA, calculated in units of the emission standard, must not exceed 10 percent if the PEMS measurements are greater than 100 ppm or 0.2 lbs/mm Btu. The RA must not exceed 20 percent if the PEMS measurements are between 100 ppm (or 0.2 lb/mm Btu) and 10 ppm (or 0.02 lb/mm Btu). For measurements below 10 ppm (or 0.02 lb/mm Btu), the absolute mean difference between the PEMS measurements and the RM measurements must not exceed 2 ppm (or 0.01 lb/mm Btu). For diluent only PEMS, an alternative criterion of ±1 percent absolute difference between the PEMS and RM may be used if less stringent.

* * * * *

13.5 Relative Accuracy Audits (RAA). The average of the three portable analyzer or RM determinations must not differ from the simultaneous PEMS average value by more than 10 percent of the analyzer or RM for concentrations greater than 100 ppm (or 0.2 lb/mm Btu) or 20 percent for concentrations between 100 ppm (or 0.2 lb/mm Btu) and 10 ppm (or 0.02 lb/mm Btu), or the test is failed. For measurements at 20 ppm (or 0.04 lb/mm Btu) or less, this difference must not exceed 2 ppm (or 0.01 lb/mm Btu) for a pollutant PEMS. For diluent PEMS, the difference must not exceed 1 percent.

* * * * *

The revisions and addition read as follows:

Appendix F to Part 60—Quality Assurance Procedures

Procedure 1. Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination

* * * * *

4. CD Assessment

4.1 CD Requirement. As described in § 60.13(d), source owners and operators of CEMS must check, record, and quantify the CD at two concentration values at least once daily (approximately 24 hours) in accordance with the method prescribed by the manufacturer. When using reference gases, introduce the reference gas prior to any sample conditioning or filtration equipment

■ 16. Amend appendix F to part 60 by:
■ a. Revising sections 4.1, 5.2.3, and 6.2 in procedure 1; and
■ b. In procedure 5:
■ i. Revising section 2.5;
■ ii. Revising the heading for section 4.0 and adding section 4.4; and
■ iii. Revising section 5.1.3.

and ensure that it passes through all filters, scrubbers, conditioners, and other monitor components used during normal sampling. The reference gas must pass through as much of the sampling probe as practical. The CEMS calibration must, at a minimum, be adjusted whenever the daily zero (or low-level) CD or the daily high-level CD exceeds two times the limits of the applicable PS's in appendix B to this part.

* * * * *

5. Data Accuracy Assessment

* * * * *

5.2.3 Criteria for Excessive Audit Inaccuracy. Unless specified otherwise in the applicable subpart of this part, the criteria for excessive inaccuracy are:

(1) For the RATA, the allowable RA in the applicable PS in appendix B to this part.

(2) For the CGA, for pollutant monitors, the audit inaccuracy must be ±15 percent of the average audit value as calculated using equation 1–1 of this method or the difference between the average CEMS response and the average audit value must be less than one of the following:

Analyzer span	Alternative CGA criteria (ppm)
≥50 ppm	±5
>20 ppm, but ≤50 ppm	±3
≤20 ppm	+2

For diluent monitors, ±15 percent of the average audit value.

(3) For the RAA, ±15 percent of the three-run average or ±7.5 percent of the applicable standard, whichever is greater.

* * * * *

6. Calculations for CEMS Data Accuracy

* * * * *

6.2 RAA Accuracy Calculation. Use equation 1–1 of this method to calculate the accuracy for the RAA. The RAA must be calculated in the units of the applicable emission standard.

* * * * *

Procedure 5. Quality Assurance Requirements for Vapor Phase Mercury Continuous Emissions Monitoring Systems and Sorbent Trap Monitoring Systems Used for Compliance Determination at Stationary Sources

* * * * *

2.0 Definitions

* * * * *

2.5 *Calibration Drift (CD)* means the absolute value of the difference between the CEMS output response and either the upscale elemental Hg reference gas or the zero-level elemental Hg reference gas, expressed as a percentage of the span value, when the entire CEMS, including the sampling interface, is challenged after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

* * * * *

4.0 Calibration Drift (CD) Assessment and Weekly System Integrity Check

* * * * *

4.4 Weekly System Integrity Check. At least once every 7 operating days, using the procedure described in section 8.3.3 of Performance Specification 12A in appendix B to this part, source owners and operators of Hg CEMS must use a single mid- or high-level oxidized Hg (mercuric chloride, $HgCl_2$) reference gas to assess transport and measurement of oxidized mercury. The absolute value of the difference between the Hg CEMS output response and the reference gas must be less than or equal to 10.0 percent of the reference gas value or 0.8 µg/scm.

* * * * *

5.0 Data Accuracy Assessment

* * * * *

5.1.3 Relative Accuracy Audit (RAA). As an alternative to the QGA, a RAA may be conducted in three of four calendar quarters, but in no more than three quarters in succession. To conduct a RAA, follow the RATA test procedures in section 8.5 of PS 12A in appendix B to this part, except that only three test runs are required. Calculate the relative accuracy according to equation 1–1 of Procedure 1 of this appendix.

* * * * *

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

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

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

Subpart A—General Provisions

■ 18. Amend § 63.14 by:

■ a. Redesignating paragraphs (d) through (t) as paragraphs (e) through (u);

■ b. Adding new paragraph (d); and

■ c. Revising newly redesignated paragraphs (i)(103) and (104).

The addition and revisions read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(d) American Public Health Association, 1015 18th Street NW, Washington, DC 20036; phone (844) 232–3707; email: *standardmethods@subscritpionoffice.com*; website: *www.standardmethods.org*.

(1) Standard Method 5210, Biochemical Oxygen Demand (BOD), revised December 10, 2019; IBR approved for § 63.457(c)

(2) [Reserved]

* * * * *

(i) * * *

(103) ASTM D6784–02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved April 1, 2008; IBR approved for §§ 63.2465(d); 63.11646(a); 63.11647(a) and (d); tables 1, 2, 5, 11, 12t, and 13 to subpart DDDDD; tables 4 and 5 to subpart JJJJJ; tables 4 and 6 to subpart KKKKK; table 4 to subpart JJJJJJ.

(104) ASTM D6784–16, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), Approved March 1, 2016; IBR approved for table 5 to subpart UUUUU; appendix A to subpart UUUUU.

* * * * *

Subpart S—National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry

■ 19. Amend § 63.457 by revising paragraph (c)(4) to read as follows:

§ 63.457 Test methods and procedures.

* * * * *

(c) * * *

(4) To determine soluble BOD_5 in the effluent stream from an open biological treatment unit used to comply with §§ 63.446(e)(2) and 63.453(j), the owner or operator shall use section B of method 5210 (IBR, see § 63.14) with the following modifications:

(i) Filter the sample through the filter paper, into an Erlenmeyer flask by applying a vacuum to the flask sidearm. Minimize the time for which vacuum is applied to prevent stripping of volatile organics from the sample. Replace filter paper as often as needed in order to maintain filter times of less than approximately 30 seconds per filter paper. No rinsing of sample container or filter bowl into the Erlenmeyer flask is allowed.

(ii) Perform method 5210B on the filtrate obtained in paragraph (c)(4) of this section. Dilution water shall be seeded with 1 milliliter of final effluent per liter of dilution water. Dilution ratios may require adjustment to reflect the lower oxygen demand of the filtered sample in comparison to the total BOD_5. Three BOD bottles and different dilutions shall be used for each sample.

* * * * *

Subpart EEE—National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors

■ 20. Amend the appendix to subpart EEE of part 63 by revising the appendix heading and section 5 to read as follows:

Appendix A to Subpart EEE of Part 63—Quality Assurance Procedures for Continuous Emissions Monitors Used for Hazardous Waste Combustors

* * * * *

5. Performance Evaluation for CO, O_2, and HC CEMS

Carbon Monoxide (CO), Oxygen (O_2), and Hydrocarbon (HC) CEMS. An Absolute Calibration Audit (ACA) must be conducted quarterly, and a Relative Accuracy Test Audit (RATA) (if applicable, see sections 5.1 and 5.2 of this method) must be conducted yearly. When a performance test is also required under § 63.1207 to document compliance with emission standards, the RATA must coincide with the performance test. The audits must be conducted as follows.

5.1 *Relative Accuracy Test Audit (RATA).* This requirement applies to O_2 and CO CEMS. The RATA must be conducted at least yearly. Conduct the RATA as described in the RA test procedure (or alternate procedures section) described in the applicable performance specifications. In addition, analyze the appropriate performance audit samples received from the EPA as described in the applicable sampling methods.

5.2 *Absolute Calibration Audit (ACA).* The ACA must be conducted at least quarterly except in a quarter when a RATA (if applicable, see section 5.1 of this method) is conducted instead. Conduct an ACA as described in the calibration error (CE) test procedure described in the applicable performance specifications.

5.3 *Excessive Audit Inaccuracy.* If the RA from the RATA or the CE from the ACA exceeds the criteria in the applicable performance specifications, hazardous waste burning must cease immediately. Hazardous waste burning cannot resume until the owner or operator takes corrective measures and audit the CEMS with a RATA to document that the CEMS is operating within the specifications.

* * * * *

Subpart JJJJ—National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating

■ 21. Amend § 63.3360 by revising paragraph (e)(1)(vi) introductory text to read as follows:

§ 63.3360 What performance tests must I conduct?

* * * * *

(e) * * *

(1) * * *

(vi) Method 25 or 25A of appendix A–7 to 40 CFR part 60 must be used to determine total gaseous organic matter concentration. Use the same test method for both the inlet and outlet measurements which must be conducted simultaneously. You must submit notice of the intended test method to the Administrator for approval along with notification of the performance test required under § 63.7(b). You must use method 25A if any of the conditions described in paragraphs (e)(1)(vi)(A) through (D) of this section apply to the control device.

* * * * *

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

■ 22. Revise table 4 to subpart ZZZZ of part 63 to read as follows:

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

As stated in §§ 63.6610, 63.6611, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE.	a. Reduce CO emissions.	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and	.....	(a) For CO, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A–1, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A–4.
		ii. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A–2, or ASTM D6522–00 (Reapproved 2005) [1] [3] (heated probe not necessary).	(b) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		iii. Measure the CO at the inlet and the outlet of the control device; and	(2) ASTM D6522–00 (Reapproved 2005) [1] [2] [3] (heated probe not necessary) or method 10 of 40 CFR part 60, appendix A–4.	(c) The CO concentration must be at 15 percent O_2, dry basis.
		iv. Measure moisture content at the inlet and outlet of the control device as needed to determine CO and O_2 concentrations on a dry basis.	(3) Method 4 of 40 CFR part 60, appendix A–3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 [1] [3].	(d) Measurements to determine moisture content must be made at the same time and location as the measurements for CO concentration.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
2. 4SRB stationary RICE.	a. Reduce formaldehyde or THC emissions.	i. Select the sampling port location and the number/location of traverse points at the inlet and outlet of the control device; and	.....	(a) For formaldehyde, THC, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A.
		ii. Measure O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A–2, or ASTM D6522–00 (Reapproved 2005) [1 3] (heated probe not necessary).	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device as needed to determine formaldehyde or THC and O_2 concentrations on a dry basis; and	(2) Method 4 of 40 CFR part 60, appendix A–3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 [1 3].	(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device.	(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03,[1 3] provided in ASTM D6348–03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130.	(d) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device.	(4) (1) Method 25A, reported as propane, of 40 CFR part 60, appendix A–7.	(e) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust.	i. Select the sampling port location and the number/location of traverse points at the exhaust of the stationary RICE; and	.....	(a) For formaldehyde, CO, O_2, and moisture measurement, ducts ≤6 inches in diameter may be sampled at a single point located at the duct centroid and ducts >6 and ≤12 inches in diameter may be sampled at 3 traverse points located at 16.7, 50.0, and 83.3% of the measurement line ('3-point long line'). If the duct is >12 inches in diameter *and* the sampling port location meets the two and half-diameter criterion of section 11.1.1 of method 1 of 40 CFR part 60, appendix A, the duct may be sampled at '3-point long line'; otherwise, conduct the stratification testing and select sampling points according to section 8.1.2 of method 7E of 40 CFR part 60, appendix A. If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A–2, or ASTM D6522–00 (Reapproved 2005) [1 3] (heated probe not necessary).	(b) Measurements to determine O_2 concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location as needed to determine formaldehyde or CO and O_2 concentrations on a dry basis; and	(2) Method 4 of 40 CFR part 60, appendix A–3, or method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 [1 3].	(c) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(3) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348–03,[1 3] provided in ASTM D6348–03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130.	(d) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		v. Measure CO at the exhaust of the stationary RICE.	(4) Method 10 of 40 CFR part 60, appendix A–4, ASTM D6522–00 (2005),[1 3] method 320 of 40 CFR part 63, appendix A, or ASTM D6348–03 [1 3].	(e) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[1] You may also use methods 3A and 10 as options to ASTM–D6522–00 (2005).
[2] You may obtain a copy of ASTM–D6348–03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.
[3] Incorporated by reference, see § 63.14.

Subpart PPPPP—National Emission Standards for Hazardous Air Pollutants for Engine Test Cells/Stands

■ 23. Amend § 63.9306 by revising paragraph (d)(2)(iv) to read as follows:

§ 63.9306 What are my continuous parameter monitoring system (CPMS) installation, operation, and maintenance requirements?

* * * * *

(d) * * *

(2) * * *

(iv) Using a pressure sensor with measurement sensitivity of 0.002 inch water, check gauge calibration quarterly and transducer calibration monthly.

* * * * *

■ 24. Amend § 63.9322 by revising paragraph (a)(1) to read as follows:

§ 63.9322 How do I determine the emission capture system efficiency?

* * * * *

(a) * * *

(1) The capture system meets the criteria in method 204 of appendix M to 40 CFR part 51 for a permanent total enclosure (PE) and directs all the exhaust gases from the enclosure to an add-on control device.

* * * * *

Subpart UUUUU—National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units

■ 25. Revise table 5 to subpart UUUUU of part 63 to read as follows:

Table 5 to Subpart UUUUU of Part 63—Performance Testing Requirements

As stated in § 63.10007, you must comply with the following requirements for performance testing for existing, new or reconstructed affected sources: [1]

BILLING CODE 6560–50–P

To conduct a performance test for the following pollutant . . .	Using . . .	You must perform the following activities, as applicable to your input- or output-based emission limit . . .	Using . . .[2]
1. Filterable Particulate matter (PM)	Emissions Testing	a. Select sampling ports location and the number of traverse points	Method 1 at appendix A-1 to part 60 of this chapter.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.[3]
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the filterable PM concentration	Methods 5 and 5I at appendix A-3 to part 60 of this chapter. For positive pressure fabric filters, method 5D at appendix A-3 to part 60 of this chapter for filterable PM emissions. Note that the method 5 or 5I front half temperature shall be 160° ±14 °C (320° ±25 °F).
		f. Convert emissions concentration to lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
	OR	OR	
	PM CEMS	a. Install, certify, operate, and maintain the PM CEMS	Performance Specification 11 at appendix B to part 60 of this chapter and Procedure 2 at appendix F to part 60 of this chapter.
		b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or	Part 75 of this chapter and § 63.10010(a) through (d).

		moisture monitoring systems	
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
2. Total or individual non-Hg HAP metals	Emissions Testing	a. Select sampling ports location and the number of traverse points	Method 1 at appendix A-1 to part 60 of this chapter.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.[3]
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the HAP metals emissions concentrations and determine each individual HAP metals emissions concentration, as well as the total filterable HAP metals emissions concentration and total HAP metals emissions concentration	Method 29 at appendix A-8 to part 60 of this chapter. For liquid oil-fired units, Hg is included in HAP metals and you may use method 29, method 30B at appendix A-8 to part 60 of this chapter or ASTM D6784-16,[3] for method 29 or ASTM D 6784-16, you must report the front half and back half results separately. When using method 29, report metals matrix spike and recovery levels.
		f. Convert emissions concentrations (individual HAP metals, total filterable HAP metals, and total HAP metals) to lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
3. Hydrogen chloride (HCl) and hydrogen fluoride (HF)	Emissions Testing	a. Select sampling ports location and the number of traverse points	Method 1 at appendix A-1 to part 60 of this chapter.

		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.[3]
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the HCl and HF emissions concentrations	Method 26 or method 26A at appendix A-8 to part 60 of this chapter or method 320 at appendix A to part 63 of this chapter or ASTM D6348-03(R2010)[3] with
			(1) the following conditions when using ASTM D6348-03(R2010):
			(A) The test plan preparation and implementation in the Annexes to ASTM D6348-03(R2010), sections A1 through A8 are mandatory;
			(B) For ASTM D6348-03(R2010) Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (see Equation A5.5);
			(C) For the ASTM D6348-03(R2010) test data to be acceptable for a target analyte, %R must be 70% ≥R ≤130%; and
			(D) The %R value for each compound must be reported in the test report and all field measurements corrected with the calculated %R value for that compound using the following equation: $Report\ Result = \frac{(Measured\ Concentration\ in\ Stack)}{\%R} \times 100$

To conduct a performance test for the following pollutant . . . (cont'd)	Using . . . (cont'd)	You must perform the following activities, as applicable to your input- or output-based emission limit . . . (cont'd)	Using . . .[2] (cont'd)
			(2) spiking levels nominally no greater than two times the level corresponding to the applicable emission limit.
			Method 26A must be used if there are entrained water droplets in the exhaust stream.
		f. Convert emissions concentration to lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
	OR	OR	
	HCl and/or HF CEMS	a. Install, certify, operate, and maintain the HCl or HF CEMS	Appendix B of this subpart.
		b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and § 63.10010(a) through (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
4. Mercury (Hg)	Emissions Testing	a. Select sampling ports location and the number of traverse points	Method 1 at appendix A-1 to part 60 of this chapter or method 30B at appendix A-8 for method 30B point selection.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.

		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-1 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981.[3]
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the Hg emission concentration	Method 30B at appendix A-8 to part 60 of this chapter, ASTM D6784-16,[3] or method 29 at appendix A-8 to part 60 of this chapter; for method 29 or ASTM D 6784-16, you must report the front half and back half results separately.
		f. Convert emissions concentration to lb/TBtu or lb/GWh emission rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
	OR	OR	
	Hg CEMS	a. Install, certify, operate, and maintain the CEMS	Sections 3.2.1 and 5.1 of appendix A of this subpart.
		b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and § 63.10010(a) through (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/TBtu or lb/GWh emissions rates	Section 6 of appendix A to this subpart.
	OR	OR	
	Sorbent trap monitoring system	a. Install, certify, operate, and maintain the sorbent trap monitoring system	Sections 3.2.2 and 5.2 of appendix A to this subpart.

		b. Install, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and § 63.10010(a) through (d).
		c. Convert emissions concentrations to 30 boiler operating day rolling average lb/TBtu or lb/GWh emissions rates	Section 6 of appendix A to this subpart.
	OR	OR	
	LEE testing	a. Select sampling ports location and the number of traverse points	Single point located at the 10% centroidal area of the duct at a port location per method 1 at appendix A-1 to part 60 of this chapter or method 30B at appendix A-8 to part 60 of this chapter for method 30B point selection.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G, or 2H at appendix A-1 or A-2 to part 60 of this chapter or flow monitoring system certified per appendix A of this subpart.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-1 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981,[3] or diluent gas monitoring systems certified according to part 75 of this chapter.
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter, or moisture monitoring systems certified according to part 75 of this chapter.
		e. Measure the Hg emission concentration	Method 30B at appendix A-8 to part 60 of this chapter; perform a 30 operating day test, with a maximum of 10 operating days per run (*i.e.,* per pair of sorbent traps) or sorbent trap monitoring system or Hg CEMS certified per appendix A of this subpart.
		f. Convert emissions concentrations from	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter

		the LEE test to lb/TBtu or lb/GWh emissions rates	or calculate using mass emissions rate and gross output data (see § 63.10007(e)).
		g. Convert average lb/TBtu or lb/GWh Hg emission rate to lb/year, if you are attempting to meet the 29.0 lb/year threshold	Potential maximum annual heat input in TBtu or potential maximum electricity generated in GWh.
5. Sulfur dioxide (SO_2)	SO_2 CEMS	a. Install, certify, operate, and maintain the CEMS	Part 75 of this chapter and § 63.10010(a) and (f).
		b. Install, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and § 63.10010(a) through (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter or calculate using mass emissions rate and gross output data (see § 63.10007(e)).

[1] Regarding emissions data collected during periods of startup or shutdown, see §§ 63.10020(b) and (c) and 63.10021(h).

[2] See tables 1 and 2 to this subpart for required sample volumes and/or sampling run times.

[3] Incorporated by reference, see § 63.14.

■ 26. Amend appendix A to subpart UUUUU of part 63 by revising sections 4.1.1.5 and 4.1.1.4.1 to read as follows:

Appendix A to Subpart UUUUU of Part 63—Hg Monitoring Provisions

* * * * *

4. Certification and Recertification Requirements

* * * * *

4.1.1.5 *Relative Accuracy Test Audit (RATA).* Perform the RATA of the Hg CEMS at normal load. Acceptable Hg reference methods for the RATA include ASTM D6784–16 (IBR, see § 63.14) and methods 29, 30A, and 30B in appendix A–8 to part 60 of this chapter. When method 29 or ASTM D6784–16 is used, paired sampling trains are required, and the filterable portion of the sample need not be included when making comparisons to the Hg CEMS results for purposes of a RATA. To validate a method 29 or ASTM D6784–16 test run, calculate the relative deviation (RD) using equation A–1 of this section, and assess the results as follows to validate the run. The RD must not exceed 10 percent, when the average Hg concentration is greater than 1.0 µg/dscm. If the RD specification is met, the results of the two samples shall be averaged arithmetically.

$$RD = \frac{|C_a - C_b|}{C_a + C_b} \times 100 \quad (Eq.\ A-1)$$

Where:

RD = Relative Deviation between the Hg concentrations of samples "a" and "b" (percent),

C_a = Hg concentration of Hg sample "a" (µg/dscm), and

C_b = Hg concentration of Hg sample "b" (µg/dscm).

4.1.1.5.1 *Special Considerations.* A minimum of nine valid test runs must be performed, directly comparing the CEMS measurements to the reference method. More than nine test runs may be performed. If this option is chosen, the results from a maximum of three test runs may be rejected so long as the total number of test results used to determine the relative accuracy is greater than or equal to nine; however, all data must be reported including the rejected data. The minimum time per run is 21 minutes if method 30A is used. If method 29, method 30B, or ASTM D6784–16 is used, the time per run must be long enough to collect a sufficient mass of Hg to analyze. Complete the RATA within 168 unit operating hours, except when method 29 or ASTM D6784–162 is used, in which case, up to 336 operating hours may be taken to finish the test.

* * * * *

■ 27. Amend appendix A to part 63 by:

■ a. Redesignating section 6.2 under the heading "16.0 Alternative Procedures" as section 16.2 in method 315; and

■ b. In method 323:

■ i. Revising sections 10.1 and 10.3;

■ ii. In section 12.1:

■ A. Adding the entry "b" following the entry "B = estimated sampling rate, Lpm"; and

■ B. Revising the entry "K_c"; and

■ iii. Revising section 12.6.

The revisions and addition read as follows:

Appendix A to Part 63—Test Methods

* * * * *

Method 323—Measurement of Formaldehyde Emissions From Natural Gas-Fired Stationary Sources—Acetyl Acetone Derivatization Method

* * * * *

10.0 Calibration and Standardization

10.1 Spectrophotometer Calibration. Prepare a stock solution of 10 µg/mL formaldehyde. Prepare a series of calibration standards from the stock solution corresponding to 0.0, 0.5, 1.5, 3.5, 5.0, and 7.5 µg/mL formaldehyde. Mix 2.0 ml of each calibration standard with 2.0 mL of acetyl acetone reagent in screw cap vials, thoroughly mix the solution, and place the vials in a water bath (or heating block) at 60 °C for 10 minutes. Remove the vials and allow to cool to room temperature. Transfer each solution to a cuvette and measure the absorbance at 412 nm using the spectrophotometer. Develop a calibration curve (response vs. concentration) from the analytical results of these standards. The acceptance criteria for the spectrophotometer calibration is a correlation coefficient of 0.99 or higher. If this criterion is not met, the calibration procedures should be repeated.

* * * * *

10.3 Calibration Checks. Calibration checks consisting of analyzing a mid-range standard separately prepared with each batch of samples. The calibration check standard must be prepared independent of the calibration stock solution. The result of the check standard must be within 10 percent of the theoretical value to be acceptable. If the acceptance criteria are not met, the standard must be reanalyzed. If still unacceptable, a new calibration curve must be prepared using freshly prepared standards.

* * * * *

12.0 Calculations and Data Analysis

12.1 Nomenclature

* * * * *

b = the intercept of the calibration curve at zero concentration.

* * * * *

K_c = spectrophotometer calibration factor, slope of the least square regression line, absorbance/(µg/mL) (*Note:* Most spreadsheets are capable of calculating a least squares line, including slope, intercept, and correlation coefficient).

* * * * *

12.6 Mass of Formaldehyde in Liquid Sample

$$m = \frac{(A-b)*F}{K_c}(V_t)\left(\frac{1\,mg}{1000\mu g}\right) \quad \text{Eq. 323-5}$$

* * * * *

[FR Doc. 2023–04956 Filed 3–28–23; 8:45 am]

BILLING CODE 6560–50–C

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R04–OAR–2021–0769; FRL–10576–02–R4]

Air Plan Approval; NC; Transportation Conformity

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving State Implementation Plan (SIP) revisions submitted by the State of North Carolina, through the North Carolina Department of Environmental Quality (DEQ), Division of Air Quality (DAQ) on September 24, 2021. The SIP revisions replace previously approved memoranda of agreement (MOAs) with thirteen updated MOAs outlining transportation conformity criteria and procedures related to interagency consultation, conflict resolution, public participation, and enforceability of certain transportation-related control and mitigation measures. EPA is approving North Carolina's September 24, 2021, SIP revisions as they are consistent with the applicable provisions of the Clean Air Act (CAA or Act).

DATES: This rule is effective April 28, 2023.

ADDRESSES: EPA has established a docket for this action under Docket Identification EPA–R04–OAR–2021–0769. All documents in the docket are listed on the *regulations.gov* website. Although listed in the index, some information may not be publicly available, *i.e.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *www.regulations.gov* or in hard copy at the Air Regulatory Management Section, Air Planning and Implementation Branch, Air and Radiation Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street SW, Atlanta, Georgia 30303–8960. EPA requests that, if possible, you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to schedule your inspection. The Regional Office's official hours of business are Monday through Friday 8:30 a.m. to 4:30 p.m., excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Kelly Sheckler, Air Regulatory Management Section, Air Planning and Implementation Branch, Air and Radiation Division, Region 4, U.S. Environmental Protection Agency, 61 Forsyth Street SW, Atlanta, Georgia 30303–8960. The telephone number is (404) 562–9222 Ms. Sheckler can also be reached via electronic mail at *sheckler.kelly@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

As described in a notice of proposed rulemaking (NPRM) published on February 7, 2023 (88 FR 7903), CAA section 176(c)(4)(E) and 40 CFR 51.390(b) require states to develop conformity SIPs that address three specific provisions of federal regulations. First, EPA's transportation conformity rule requires states to develop their own processes and procedures which meet the criteria in 40 CFR 93.105 for interagency consultation and resolution of conflicts among the federal, state, and local agencies. The SIP revision must include processes and procedures to be followed by the metropolitan planning organization (MPO), state Department of Transportation (DOT), and the United States Department of Transportation (USDOT) in consultation with the state and local air quality agencies and EPA before making conformity determinations. The conformity SIP revision must also include processes and procedures for the state and local air quality agencies and EPA to coordinate the development of applicable SIPs with MPOs, state DOTs and the USDOT.

States may choose to develop, in place of regulations, an MOA which establishes the roles and procedures for transportation conformity. The MOA includes the detailed consultation procedures developed for that particular area. The MOAs are enforceable through the signature of all the transportation and air quality agencies, including the USDOT's Federal Highway Administration, USDOT's Federal Transit Administration, and EPA.

North Carolina's September 24, 2021, conformity SIP revisions add new interagency partners and MPOs, establish new procedures for interagency consultation, dispute resolution, public participation and enforceability of certain transportation-

and Tallahassee, Florida. The Coast Guard is activating these zones in order to protect vessels and waterway users from the potential hazards created by reentry vehicle splashdowns and recovery operations. In accordance with the general regulations in 33 CFR part 165, subpart C, no U.S.-flagged vessel may enter the safety zones unless authorized by the District Commander or a designated representative except as provided in § 165.T07–0806(d)(3). All foreign-flagged vessels are encouraged to remain outside the safety zones.

There are three other safety zones listed in § 165.T07–0806(a)(1), (a)(2), and (a)(3), which are located within the COTP Jacksonville AOR, in addition to a portion of zone listed in (a)(1) that is located in the COTP Savannah AOR, that are being simultaneously activated through a separate notifications of enforcement of the regulation document issued under Docket Numbers USCG–2023–0302, and USCG–2023–0331.[1]

Twenty-four hours prior to the recovery operations, the COTP or designated representative will inform the public that only one of the five safety zones described in § 165.T07–0806, paragraph (a), will remain activated (subject to enforcement). This zone will remain activated until announced by Broadcast Notice to Mariners on VHF–FM channel 16, and/or Marine Safety Information Bulletin (as appropriate) that the safety zone is no longer subject to enforcement. After the CRS 27 reentry vehicle splashdown, the District Commander or a designated representative will grant general permission to come no closer than 3 nautical miles of any reentry vehicle or space support vessel engaged in the recovery operations, within the activated safety zone described in § 165.T07–0806, paragraph (a). Once the reentry vehicle, and any personnel involved in reentry service, are removed from the water and secured onboard a space support vessel, the District Commander or designated representative will issue a Broadcast Notice to Mariners on VHF–FM channel 16 announcing the activated safety zone is no longer subject to enforcement. The recovery operations are expected to last approximately one hour.

[1] These notifications of enforcement of the regulation can be found at: *https://regulations.gov* by searching for docket number USCG–2023–0302, and USCG–2023–0331.

The Coast Guard may be assisted by other Federal, State, or local law enforcement agencies in enforcing this regulation.

Dated: April 12, 2023.

Michael P. Kahle,

Captain, U.S. Coast Guard, Commander, Sector St. Petersburg.

[FR Doc. 2023–08183 Filed 4–19–23; 8:45 am]

BILLING CODE 9110–04–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2020–0556; FRL–8335–04–OAR]

RIN 2060–AV35

Testing Provisions for Air Emission Sources; Correction

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; correction.

SUMMARY: The Environmental Protection Agency (EPA) is correcting a final rule that was published in the **Federal Register** on March 29, 2023, that will be effective on May 30, 2023. The final rule corrected and updated regulations for source testing of emissions. This correction does not change any final action taken by the EPA on March 29, 2023.

DATES: Effective May 30, 2023.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2020–0556. All documents in the docket are listed on the *www.regulations.gov* website. Although listed in the index, some information is not publicly available, *e.g.,* confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy. Publicly available docket materials are available electronically through *www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Mrs. Lula H. Melton, Office of Air Quality Planning and Standards, Air Quality Assessment Division (E143–02), Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541–2910; fax number: (919) 541–0516; email address: *melton.lula@epa.gov.*

SUPPLEMENTARY INFORMATION: In the final rule published on March 29, 2023 (88 FR 18396), the following correction to an amendatory instruction to ''Appendix A to Part 63'' is made.

Appendix A to Subpart UUUUU of Part 63—[Corrected]

On page 18422, in the first column, amendatory instruction 26 is corrected to read: ''26. Amend appendix A to subpart UUUUU of part 63 by revising sections 4.1.1.5 and 4.1.1.5.1 to read as follows:''

Date: April 12, 2023.

Richard A. Wayland,

Director, Air Quality Assessment Division, Office of Air Quality Planning and Standards.

[FR Doc. 2023–08178 Filed 4–19–23; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[DA 23–311; MB Docket No. 21–502; FR ID 136555]

Radio Broadcasting Services; Millerton, Oklahoma; Powers, Oregon; Mount Enterprise and Paint Rock, Texas; Hardwick, Vermont; and Meeteetse, Wyoming

AGENCY: Federal Communications Commission.

ACTION: Final rule; grant of petition for reconsideration.

SUMMARY: This document amends the FM Table of Allotments, of the Federal Communications Commission's (Commission) rules, by reinstating Channel 290A at Hardwick, Vermont, in response to the Commission's grant of the Petition for Reconsideration filed by Shire and Shore Communications. The window period for filing applications for Channel 290A at Hardwick, Vermont, will be announced by the Commission in the near future.

DATES: Effective May 26, 2023.

FOR FURTHER INFORMATION CONTACT: Rolanda F. Smith, Media Bureau, (202) 418–2700.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Memorandum Opinion and Order, adopted April 11, 2023, and released April 11, 2023. The full text of this Commission decision is available online

cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by May 8, 2023. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. *See* section 307(b)(2).

List of Subjects in 40 CFR Part 52

Environmental Protection, Air Pollution Control, Incorporation by Reference, Intergovernmental Relations, Nitrogen Oxides, Ozone, Reporting and Recordkeeping Requirements, Volatile Organic Compounds.

Dated: February 28, 2023.

Daniel Blackman,

Regional Administrator, Region 4.

For the reasons stated in the preamble, EPA amends 40 CFR part 52 as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

■ 1. The authority citation for part 52 continues to read as follows:

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

Subpart L—Georgia

■ 2. In § 52.570, amend the table in paragraph (e) by adding an entry for ''1997 8-hour Ozone 2nd Maintenance Plan (Limited Maintenance Plan) for the Macon Area'' at the end of the table to read as follows:

§ 52.570 Identification of plan.

* * * * *

(e) * * *

EPA-APPROVED GEORGIA NON-REGULATORY PROVISIONS

Name of nonregulatory SIP provision	Applicable geographic or nonattainment area	State submittal date/effective date	EPA approval date	Explanation
*	*	*	*	*
1997 8-hour Ozone 2nd Maintenance Plan (Limited Maintenance Plan) for the Macon Area.	Bibb County and a portion of Monroe County.	10/20/2021	3/8/2023, [Insert citation of publication].	

[FR Doc. 2023–04505 Filed 3–7–23; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA–HQ–OAR–2021–0133; FRL–8473–03–OAR]

RIN 2060–AV27

National Emission Standards for Hazardous Air Pollutants: Wood Preserving Area Sources Technology Review; Technical Correction for Surface Coating of Wood Building Products

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action finalizes the technology review (TR) conducted for the Wood Preserving Area Sources category regulated under national emission standards for hazardous air pollutants (NESHAP). While the Environmental Protection Agency (EPA) is making no changes to the existing standards as a result of the TR, this action establishes minor editorial and formatting changes to the Wood Preserving Area Sources NESHAP table of applicable general provisions. In addition, the EPA is finalizing technical corrections to the Surface Coating of Wood Building Products NESHAP.

DATES: This final rule is effective on March 8, 2023.

ADDRESSES: The U.S. Environmental Protection Agency (EPA) has established a docket for this action under Docket ID No. EPA–HQ–OAR–2021–0133. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *https://www.regulations.gov/,* or in hard copy at the EPA Docket Center, WJC West Building, Room Number 3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m. Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–1742.

FOR FURTHER INFORMATION CONTACT: Mr. Cyrus Ma, Sector Policies and Programs Division (mail code E143–03), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541–4210; and email address: *Ma.Cyrus@epa.gov.*

SUPPLEMENTARY INFORMATION:

Preamble acronyms and abbreviations. Throughout this preamble the use of ''we,'' ''us,'' or ''our'' is intended to refer to the EPA. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

CAA Clean Air Act
CBI Confidential Business Information
CCA Chromated Copper Arsenate
CFR Code of Federal Regulations
CRA Congressional Review Act
EJ Environmental Justice
EPA Environmental Protection Agency
EST Eastern Standard Time
GACT Generally Available Control Technology
HAP Hazardous Air Pollutant(s)
KM Kilometer

MACT Maximum Achievable Control Technology
NESHAP National Emission Standards for Hazardous Air Pollutants
NTTAA National Technology Transfer and Advancement Act
OCSPP Office of Chemical Safety and Pollution Prevention
OMB Office of Management and Budget
OSHA Occupational Safety and Health Administration
PRA Paperwork Reduction Act
RFA Regulatory Flexibility Act
TR Technology Review
UMRA Unfunded Mandates Reform Act

Background information. On March 7, 2022, the EPA proposed revisions to the Wood Preserving Area Sources NESHAP based on our TR. In this action, we are finalizing decisions and revisions for the rule. We summarize comments we received regarding the proposed rule and provide our responses in this preamble. A ''track changes'' version of the regulatory language that incorporates the changes in this action is available in the docket (docket ID No. EPA–HQ–OAR–2021–0133).

Organization of this document. The information in this preamble is organized as follows:

I. General Information
A. Does this action apply to me?
B. Where can I get a copy of this document and other related information?
C. Judicial Review and Administrative Reconsideration
II. Background
A. What is the statutory authority for this action?
B. What is the Wood Preserving Area Sources source category and how does the NESHAP regulate HAP emissions from the source category?
C. What changes did we propose for the Wood Preserving Area Sources source category in our March 7, 2022, proposal?
III. What is included in this final rule?
A. What are the final rule amendments based on the technology review for the Wood Preserving Area Sources source category?
B. What other changes are we finalizing in the NESHAP for Wood Preserving Area Sources?
C. What are the technical corrections to the NESHAP for Surface Coating of Wood Building Products?
IV. What is the rationale for our final decisions and amendments for the Wood Preserving Area Sources source category and the technical corrections to the NESHAP for Surface Coating of Wood Building Products?
A. Technology Review for the Wood Preserving Area Sources Source Category
1. What did we propose pursuant to CAA section 112(d)(6) for the Wood Preserving Area Sources source category?
2. How did the TR change for the Wood Preserving Area Sources source category?
3. What comments did we receive on the TR, and what are our responses?
4. What is the rationale for our final approach for the TR?
B. Changes to Wood Preserving Area Sources NESHAP Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ
1. What changes did we propose to Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ?
2. How did revisions in the final action change Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ?
3. What comments did we receive on the proposed changes to Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ, and what are our responses?
4. What is the rationale for our final approach for the changes to Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ?
C. Technical Corrections to the NESHAP for Surface Coating of Wood Building Products
1. What technical corrections were proposed to the NESHAP for Surface Coating of Wood Building Products?
2. How did the technical corrections to the NESHAP for Surface Coating of Wood Building Products change?
3. What comments did we receive on the technical corrections to the NESHAP for Surface Coating of Wood Building Products?
4. What is the rationale for our final approach for the technical corrections to the NESHAP for Surface Coating of Wood Building Products?
V. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted
A. What are the affected facilities?
B. What are the air quality impacts?
C. What are the cost impacts?
D. What are the economic impacts?
E. What are the benefits?
F. What analysis of environmental justice did we conduct?
G. What analysis of children's environmental health did we conduct?
VI. Statutory and Executive Order Reviews
A. Executive Orders 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
B. Paperwork Reduction Act (PRA)
C. Regulatory Flexibility Act (RFA)
D. Unfunded Mandates Reform Act (UMRA)
E. Executive Order 13132: Federalism
F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks
H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer and Advancement Act (NTTAA)
J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
K. Congressional Review Act (CRA)

I. General Information

A. Does this action apply to me?

Regulated entities. Categories and entities potentially regulated by this action are shown in Table 1 of this preamble.

TABLE 1—NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS FINAL ACTION

NESHAP	Source category	NAICS[1] code
40 CFR part 63, subpart QQQQQQ	Wood Preserving Area Sources	321114.
40 CFR part 63, subpart QQQQ	Surface Coating of Wood Building Products	321211, 321212, 321218, 321219, 321911, 321999.

[1] North American Industry Classification System.

Table 1 of this preamble is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by the final action for the source category listed. To determine whether your facility is affected, you should examine the applicability criteria in the appropriate NESHAP. If you have any questions regarding the applicability of any aspect of this NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this final action will also be available on the internet. Following signature by the EPA Administrator, the EPA will post a

copy of this final action at: *https://www.epa.gov/stationary-sources-air-pollution/wood-preserving-area-sources-national-emission-standards-hazardous.* Following publication in the **Federal Register**, the EPA will post the **Federal Register** version and key technical documents at this same website.

Additional information is available at *https://www.epa.gov/stationary-sources-air-pollution/wood-preserving-area-sources-national-emission-standards-hazardous.* This information includes a summary of the NESHAP, links to the various regulatory actions for the source category, and other related documents.

C. Judicial Review and Administrative Reconsideration

Under Clean Air Act (CAA) section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (the Court) by May 8, 2023. Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

II. Background

A. What is the statutory authority for this action?

The statutory authority for this action is provided by sections 112 and 301 of the CAA, as amended (42 U.S.C. 7401 *et seq.*). Section 112(d)(6) requires the EPA to review standards promulgated under CAA section 112(d) and revise them ''as necessary (taking into account developments in practices, processes, and control technologies)'' no less often than every 8 years following promulgation of those standards. This is referred to as a ''technology review'' and is required for all standards established under CAA section 112(d) including generally available control technology (GACT) standards that apply to area sources.[1] This action finalizes the 112(d)(6) technology review for the Wood Preserving Area Sources area source NESHAP.

Several additional CAA sections are relevant to this action as they specifically address regulation of hazardous air pollutant (HAP) emissions from area sources. Collectively, CAA sections 112(c)(3), (d)(5), and (k)(3) are the basis of the Area Source Program under the Urban Air Toxics Strategy, which provides the framework for regulation of area sources under CAA section 112.

Section 112(k)(3)(B) of the CAA requires the EPA to identify at least 30 HAP that pose the greatest potential health threat in urban areas with a primary goal of achieving a 75 percent reduction in cancer incidence attributable to HAP emitted from stationary sources. As discussed in the Integrated Urban Air Toxics Strategy (64 FR 38706, 38715, July 19, 1999), the EPA identified 30 HAP emitted from area sources that pose the greatest potential health threat in urban areas, and these HAP are commonly referred to as the ''30 urban HAP.''

Section 112(c)(3), in turn, requires the EPA to list sufficient categories or subcategories of area sources to ensure that area sources representing 90 percent of the emissions of the 30 urban HAP are subject to regulation. The EPA implemented these requirements through the Integrated Urban Air Toxics Strategy by identifying and setting standards for categories of area sources including the Wood Preserving Area Sources source category that is addressed in this action.

CAA section 112(d)(5) provides that for area source categories, in lieu of setting maximum achievable control technology (MACT) standards (which are generally required for major source categories), the EPA may elect to promulgate standards or requirements for area sources ''which provide for the use of generally available control technology or management practices [GACT] by such sources to reduce emissions of hazardous air pollutants.'' In developing such standards, the EPA evaluates the control technologies and management practices that reduce HAP emissions that are generally available for each area source category. Consistent with the legislative history, we can consider costs and economic impacts in determining what constitutes GACT.

GACT standards were set for the Wood Preserving Area Sources source category in 2007. As noted above, this action finalizes the required CAA 112(d)(6) technology review for that source category.

B. What is the Wood Preserving Area Sources source category and how does the NESHAP regulate HAP emissions from the source category?

The EPA promulgated the Wood Preserving Area Sources NESHAP on July 16, 2007 (72 FR 38864). The standards are codified at 40 CFR part 63, subpart QQQQQQ. The Wood Preserving Area Sources industry consists of facilities that use either a pressurized or thermal treatment process to impregnate wood with chemicals that provide long-term resistance to attack by fungi, bacteria, insects, or marine borers. Some of the products produced by the wood preserving industry include posts, cross ties, switch ties, utility poles, round timber pilings, lumber for aquatic applications, and fire-retardant lumber products.

More than 95 percent of all treated wood is preserved through pressurized processes. Almost all pressurized wood preservation processes use a closed treating cylinder or retort. A retort is an airtight pressure vessel, typically a long horizontal cylinder, used for the pressure impregnation of wood products with a liquid preservative. In a thermal treatment process, the wood is exposed to the preservative in an open vessel. The wood is immersed between separate tanks containing heated and cold preservative, which are either oil-borne or waterborne. Alternatively, thermal treated wood may be immersed in one tank that is first heated then allowed to cool. During the hot bath, the expansion of air in the wood forces some air out and improves the penetration of preservatives. In the cold bath, air in the wood contracts, creating a partial

[1] For categories of area sources subject to GACT standards, CAA sections 112(d)(5) and (f)(5) provide that the EPA is not required to conduct a residual risk review under CAA section 112(f)(2).

vacuum, and atmospheric pressure forces more preservative into the wood.

There are three general classes of wood preservatives: (a) oils, such as creosote and petroleum solutions of pentachlorophenol (PCP) and copper naphthenate, (b) waterborne salts that are applied as water solutions, such as chromated copper arsenate (CCA), and (c) light organic solvents, which serve as carriers for synthetic insecticides. Over the past few decades, the wood preserving industry has undergone several changes related to the types of preservatives used for certain applications and the associated emissions. Of the variety of wood preservatives being used today, some contain HAP while others do not.

Per 40 CFR 63.11428, the NESHAP is applicable to any wood preserving operation located at an area source that emits HAP. However, the urban HAP for which the source category was listed are arsenic, chromium, methylene chloride, and dioxins (72 FR 16652). As such, the Wood Preserving Area Sources NESHAP only applies to operations with the potential to emit these four urban HAP. Three wood preservatives, PCP, CCA, and ammoniacal copper zinc arsenate (ACZA), contain at least one of the urban HAP. The HAP PCP contains trace concentrations of dioxins, which are an urban HAP. The urban HAP arsenic and chromium are contained in CCA. The urban HAP arsenic is contained in ACZA. The EPA is not aware of any facilities currently using a wood preservative containing the urban HAP methylene chloride. No methylene chloride emissions were reported in the 2019 Toxic Release Inventory (TRI) and the EPA's Office of Chemical Safety and Pollution Prevention (OCSPP) does not currently identify the use of methylene chloride as a wood preservative. Altogether, the source category covered by the GACT standards currently includes 322 facilities. The EPA estimates that 177 of the 322 Wood Preserving Area Sources use a wood preservative containing an urban HAP and are therefore subject to the GACT standards. The remaining area sources use wood preservatives that do not contain HAP or use creosote, which contains the HAP naphthalene.

The GACT standards require any facility using a pressure treatment process to use a retort or similarly enclosed vessel for the preservative treatment. Facilities using a thermal treatment process are required to use process treatment tanks equipped with air scavenging systems to capture and control air emissions. In addition, all facilities must prepare and operate according to a management practice plan to minimize air emissions, including emissions from process tanks and equipment (*e.g.,* retorts, other enclosed vessels, thermal treatment tanks), storage, handling, and transfer operations. These standards are required to be documented in a management practices plan. See 40 CFR 63.11430(c).

C. What changes did we propose for the Wood Preserving Area Sources source category in our March 7, 2022, proposal?

On March 7, 2022, the EPA published a proposed rule in the **Federal Register** for the Wood Preserving Area Source NESHAP, 40 CFR part 63, subpart QQQQQQ, that took into consideration the TR analyses. In the proposed rule, we proposed no changes to the standards as a result of the TR. The EPA proposed minor editorial and formatting changes to Table 1 in the Wood Preserving Area Sources NESHAP which outlines the applicability of CAA General Provisions (see docket ID EPA–HQ–OAR–2021–0133–0017 for Redline Version of 40 CFR part 63, subpart QQQQQQ Showing Proposed Changes).

III. What is included in this final rule?

This action finalizes the EPA's determinations pursuant to the TR provisions of CAA section 112 for the Wood Preserving Area Sources source category. This action also finalizes other changes to the NESHAP, including minor editorial and formatting changes to Table 1 in the Wood Preserving Area Sources NESHAP.

A. What are the final rule amendments based on the technology review for the Wood Preserving Area Sources source category?

We determined that there are no developments in practices, processes, and control technologies that warrant revisions to the GACT standards for this source category. Therefore, this final rule does not make any revisions to the GACT standards under CAA section 112(d)(6).

B. What other changes are we finalizing in the NESHAP for Wood Preserving Area Sources?

This action also finalizes, as proposed, minor editorial and formatting changes to the Wood Preserving Area Sources NESHAP Table 1, which outlines the applicability of CAA General Provisions. The notice of proposed rulemaking described the changes to the Subpart QQQQQQ Table 1, and a redline strikeout version of the Subpart QQQQQQ Table 1 showing proposed changes was available in the docket (see docket ID EPA–HQ–OAR–2021–0133–0017). This action finalizes the changes as detailed in that document.

C. What are the technical corrections to the NESHAP for Surface Coating of Wood Building Products?

This action finalizes technical corrections to the NESHAP for Surface Coating of Wood Building Products. As described in the March 7, 2022, proposal, changes are necessary because the NESHAP for Surface Coating of Wood Building Products contains a reference to an Occupational Safety and Health Administration (OSHA) provision that has since been removed.

IV. What is the rationale for our final decisions and amendments for the Wood Preserving Area Sources source category and the technical corrections to the NESHAP for Surface Coating of Wood Building Products?

For each issue, this section provides a description of what we proposed and what we are finalizing for the issue, the EPA's rationale for the final decisions and amendments, and a summary of comments and responses.

A. Technology Review for the Wood Preserving Area Sources Source Category

1. What did we propose pursuant to CAA section 112(d)(6) for the Wood Preserving Area Sources source category?

Based on our TR described in the March 7, 2022, proposal (87 FR 12633), we found no developments in practices, processes, or control technologies that necessitate revisions to the standards for the Wood Preserving Area Sources NESHAP (40 CFR part 63, subpart QQQQQQ).

2. How did the TR change for the Wood Preserving Area Sources source category?

After considering the comments received on the proposed rule and given that commenters did not identify any new practices, processes, and control technologies to further reduce emissions of arsenic, chromium, dioxins, or methylene chloride, the EPA has decided that no changes to the TR are necessary. Therefore, the EPA is finalizing its findings in the proposed rule that revisions to the emission standards for the Wood Preserving Area Sources NESHAP are not warranted under CAA section 112(d)(6).

3. What comments did we receive on the TR, and what are our responses?

Two comments were received on the proposed rulemaking. To access these

comments in the docket for the proposed rule, see Docket ID No. EPA–HQ–OAR–2021–0133–0022 and EPA–HQ–OAR–2021–0133–0021.

Comment: A commenter acknowledged that EPA regulations minimize emissions of the urban HAP (arsenic, chromium, dioxins, and methylene chloride) but expressed concern regarding the health impacts associated with long-term exposure. The commenter stated that the EPA's determination that there was no cost-effective measure to further reduce emissions failed to consider the human health costs related to the bioaccumulation of HAP in surrounding environments and the secondary exposure to people beyond those directly affected at the source. The commenter suggested that the EPA consider natural and sustainable ways of preserving wood that do not incorporate synthetic chemicals and referenced an article on the complex nanostructure of cicada wings. The article, last updated in 2021, indicates that the surface of cicada wings is comprised of microscopic ''nanopillars'' and is naturally coated with waxy substances that repel water, dirt, and bacteria. The author of the article writes that scientists are currently exploring ways to design and manufacture nanoscale surfaces that possess these properties.

Response: The TR did not identify any generally available non-synthetic methods of wood preserving, and the commenter did not provide any direct information identifying an industrial-scale natural method of treating wood that would produce long-term resistance to attack by fungi, bacteria, insects, or marine borers for use as posts, cross ties, switch ties, utility poles, round timber pilings, lumber for aquatic applications, and fire-retardant wood products. The EPA did not identify any natural wood preserving methods that imitate the nanostructure of cicada wings and their ability to repel water, dirt, and bacteria.

Comment: A commenter opposed the proposal on the basis that there should be stronger standards to protect populations of concern. The commenter stated that although air quality would not be negatively impacted by the proposed action, it would also not improve it for populations of concern. The commenter restated results from our demographic analysis and pointed out that people of lower socioeconomic status and minorities are being exposed to emissions at a higher rate than other populations. The commenter noted that if arsenic levels are high enough, it can negatively impact the environment. The commenter requested that the EPA reevaluate the proposed decision.

Response: This action implements CAA section 112(d)(6), which requires the EPA to review standards promulgated under CAA section 112(d) and revise them ''as necessary (taking into account developments in practices, processes, and control technologies).'' The TR and neither commenter identified any cost-effective developments in practices, processes, and control technologies for wood preserving facilities that would further reduce emissions beyond the management practice and reporting requirements that currently exist in the rule. As the commenter noted, the proposal would not negatively impact air quality. The EPA notes that reducing emissions of urban air toxics has been a priority for EPA since the passage of the Clean Air Act Amendments in 1990. There have been significant reductions in urban air toxics because of EPA regulations, including the Wood Preserving Area Sources NESHAP, and enforcement actions. The EPA expects compliance with the Wood Preserving Area Sources NESHAP has reduced and will continue to reduce the effects of emissions on populations in proximity to wood preserving facilities, including in communities potentially overburdened by pollution. For more information on our analysis of environmental justice, see Section VI.F.

4. What is the rationale for our final approach for the TR?

Based on the TR and after evaluating all comments received on the TR, we determined that no changes to the review are necessary. Therefore, pursuant to CAA section 112(d)(6), we are finalizing the TR as proposed.

B. Changes to Wood Preserving Area Sources NESHAP Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ

1. What changes did we propose to Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ?

In the March 7, 2022, proposal (87 FR 12633), we proposed minor editorial and formatting changes to Table 1 to Subpart QQQQQQ of Part 63 for the Wood Preserving Area Sources NESHAP listing the applicable general provisions. The notice of proposed rulemaking described the changes and a redline strikeout version of Table 1 showing proposed changes was available in the docket.

2. How did revisions in the final action change Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ?

In the final rule, the EPA is making the revisions to Table 1 to Subpart QQQQQQ of Part 63 for the Wood Preserving Area Sources NESHAP as described in the proposal published on March 7, 2022.

3. What comments did we receive on the proposed changes to Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ, and what are our responses?

No comments were received on the proposed changes to Table 1 to Subpart QQQQQQ of Part 63 for the Wood Preserving Area Sources source category.

4. What is the rationale for our final approach for the changes to Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ?

No comments were received regarding the proposed changes to Table 1 to Subpart QQQQQQ of Part 63 for the Wood Preserving Area Sources source category. Therefore, those changes are being finalized as proposed.

C. Technical Corrections to the NESHAP for Surface Coating of Wood Building Products

1. What technical corrections were proposed to the NESHAP for Surface Coating of Wood Building Products?

In the March 7, 2022, proposal (87 FR 12633), we proposed technical corrections to the NESHAP for Surface Coating of Wood Building Products. The proposed technical corrections were necessary because the NESHAP for Surface Coating of Wood Building Products contains a reference to an OSHA provision that has changed. The EPA proposed to amend 40 CFR 63.4741(a)(1)(i) and (a)(4), which describe how to determine the mass fraction of organic HAP in each material used, to remove references to OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4). The reference to OSHA-defined carcinogens as specified in 29 CFR 1910.1200(d)(4) is intended to specify which compounds must be included in calculating total organic HAP content of a coating material if they are present at 0.1 percent or greater by mass. The EPA is eliminating this reference because OSHA revised its hazard communication standard in 2012 and completely removed 29 CFR 1910.1200(d)(4) from the CFR (58 FR

17574, March 26, 2012). Consequently, the NESHAP for Surface Coating of Wood Building Products cross-references a regulatory citation that no longer exists. The EPA proposed to replace these references to OSHA-defined carcinogens and 29 CFR 1910.1200(d)(4) with a new table explicitly included in the regulatory text (proposed as Table 7 to 40 CFR part 63, subpart QQQQ) of those organic HAP that must be included in calculating the total organic HAP content of a coating material if they are present at 0.1 percent or greater by mass. The proposed redline strikeout regulatory edits that would be necessary to incorporate the changes were included in the docket.

2. How did the technical corrections to the NESHAP for Surface Coating of Wood Building Products change?

The EPA is finalizing the technical corrections to the NESHAP for Surface Coating of Wood Building Products as proposed.

3. What comments did we receive on the technical corrections to the NESHAP for Surface Coating of Wood Building Products?

No comments were received on the proposed technical corrections to the NESHAP for Surface Coating of Wood Building Products.

4. What is the rationale for our final approach for the technical corrections to the NESHAP for Surface Coating of Wood Building Products?

No comments were received on the proposed technical corrections to the NESHAP for Surface Coating of Wood Building Products. Therefore, the technical corrections to the NESHAP for Surface Coating of Wood Building Products are being finalized as proposed.

V. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted

A. What are the affected facilities?

Approximately 322 area source wood preserving facilities in the United States are subject to 40 CFR part 63, subpart QQQQQQ. Approximately 177 of those facilities use or are permitted to use a wood preservative containing arsenic, chromium, dioxins, or methylene chloride, and therefore must comply with the management practice requirements.

B. What are the air quality impacts?

Because we are not revising the standards for Wood Preserving Area Sources, we do not anticipate any quantifiable air quality impacts as a result of the final action.

C. What are the cost impacts?

We expect that the action will have minimal cost impacts for Wood Preserving Area Sources. In the March 7, 2022, proposed rule we estimated a one-time cost of $270 per facility (in 2019 dollars) associated with an affected facility reviewing the rule. Because the EPA is finalizing the rule as proposed, there are no changes to this cost estimate.

D. What are the economic impacts?

Economic impact analyses focus on changes in market prices and output levels. If changes in market prices and output levels in the primary markets are significant enough, impacts on other markets may also be examined. Both the magnitude of costs needed to comply with a final rule and the distribution of these costs among affected facilities can have a role in determining how the market will change in response to a final rule. Because the costs associated with the final revisions are minimal, no significant economic impacts are anticipated as a result of the final amendments. As presented in the March 7, 2022, proposed rule, the total cost associated with this action is estimated to be approximately $87,000. This estimate is based on the one-time cost of $270 per facility with 322 facilities estimated to be subject to the regulation.

E. What are the benefits?

The final amendments to the Wood Preserving Areas Sources NESHAP are limited to editorial and technical corrections to Table 1 at the end of the regulation listing the applicable part 63 General Provisions. These changes improve the accuracy and clarity of the rule.

F. What analysis of environmental justice did we conduct?

Executive Order 12898 directs the EPA to identify the populations of concern who are most likely to experience unequal burdens from environmental harms; specifically, minority populations (*i.e.,* people of color), low-income populations, and Indigenous peoples (59 FR 7629, February 16, 1994). Additionally, Executive Order 13985 is intended to advance racial equity and support underserved communities through Federal government actions (86 FR 7009, January 20, 2021). The EPA defines environmental justice (EJ) as ''the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.'' The EPA further defines the term fair treatment to mean that ''no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental, and commercial operations or programs and policies.'' In recognizing that people of color and low-income populations often bear an unequal burden of environmental harms and risks, the EPA continues to consider ways of protecting them from adverse public health and environmental effects of air pollution.

To examine the potential for any EJ issues that might be associated with the source category, we performed a demographic analysis at proposal, and have determined that the data and affected facilities did not change as a result of public comments. Therefore, the analysis from the proposed rule is still applicable for this final action. The results of the demographic analysis can be found in section IV(F) of the proposed rule's preamble (see 87 FR 12633, March 7, 2022). The analysis included an assessment of individual demographic groups of the populations living within 5 km and within 50 km of the facilities. We then compared the data from the analysis to the national average for each of the demographic groups. The results show that for populations within 5 km of the 322 existing facilities, the following demographic groups were above the national average: African American (21 percent versus 12 percent nationally), Hispanic/Latino (21 percent versus 19 percent nationally), and people living below the poverty level (18 percent versus 13 percent nationally). The results show that for populations within 50 km of the 322 existing facilities, the percent African American population was above the national average (14 percent versus 12 percent nationally). The methodology and the results of the demographic analysis are presented in a technical report, ''Analysis of Demographic Factors for Populations Living Near Wood Preserving Area Sources,'' available in the docket for this action (Docket ID No. EPA–HQ–OAR–2021–0133).

Given that the EPA is not revising the standards for Wood Preserving Area Sources, we do not anticipate any quantifiable air quality impacts as a result of the final action. The final amendments are limited to editorial and technical corrections to Table 1 at the end of the regulation listing the

applicable part 63 General Provisions. These changes improve the accuracy and clarity of the rule. We note that wood preservatives containing the urban HAP arsenic, chromium, methylene chloride, and dioxin (a trace contaminant in PCP) either have been significantly reduced, are in the process of being phased out, or have been phased out completely since this source category was listed (see Docket ID No. EPA–HQ–OAR–2021–0133–0016 Technology Review for the Wood Preserving Area Sources NESHAP, page 6, and Docket ID No. EPA–HQ–OPP–2014–0653 Pentachlorophenol Final Registration Review Decision).

G. What analysis of children's environmental health did we conduct?

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control number 2060–0598. This action does not include any new reporting or recordkeeping requirements and therefore does not impose an information collection burden.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. The small entities subject to the requirements of this action are small businesses. The Agency has determined that all small entities affected by this action, estimated to be 173 entities, may experience an impact of less than 0.7 percent of revenues, with approximately 91 percent of these entities estimated to experience a potential impact of less than 0.1 percent of revenues. Details of the analysis were presented in the spreadsheet titled *RFA_Analysis_Wood_2022_Final.xlsx,* which is found in the docket.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. While this action creates an enforceable duty on the private sector, the cost does not exceed $100 million or more.

E. Executive Order 13132: Federalism

This action does not have federalism implications in relation to Executive Order 13132. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. None of the Wood Preserving Area Sources that have been identified as being affected by this action are owned or operated by tribal governments. However, we determined that 145 tribes were located near a Wood Preserving Area Source facility. Consistent with the EPA Policy on Coordination and Consultation with Indian Tribes, the EPA offered tribal leadership the opportunity for government-to-government consultation with no response.

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

This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA)

This action does not involve any technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations (people of color and/or Indigenous peoples) and low-income populations.

The demographic analysis presented in Section V.F. of this preamble provides information on the demographic characteristics (*e.g.,* race, ethnicity, income) of the populations living near wood preserving facilities but does not provide information on health or environmental effects from these sources. From the demographic analysis, EPA determined that for populations living within 5 km of wood preserving facilities the percentage of residents who are African American, Hispanic/Latino, or living below the poverty level are higher than the nationwide average (see section IV.F. of 87 FR 12633, March 7, 2022).

Because percentages of people of color and low-income individuals living near wood preserving facilities are higher than nationwide averages, the EPA acknowledges that the human health or environmental conditions that exist prior to this action have the potential to result in disproportionate and adverse human health or environmental effects on people of color, low-income populations, and/or Indigenous peoples. However, we note that wood preservatives containing the urban HAP arsenic, chromium, methylene chloride, and dioxin (a trace contaminant in PCP) either have been significantly reduced, are in the process of being phased out, or have been phased out completely since this source category was listed. This action is not likely to change any potential existing disproportionate effects on people of color, low-income populations and/or Indigenous peoples because we are not amending existing emission standards in the Wood Preserving Area Sources NESHAP and are finalizing minor editorial and formatting changes as discussed earlier in this preamble.

The information supporting this Executive Order review is contained in a technical report, Analysis of Demographic Factors for Populations Living Near National Emission Standard for Hazardous Air Pollutants: Technology Review for Wood Preserving Area Sources (see Docket ID No. EPA–HQ–OAR–2021–0133–0020) and is discussed in section V.F of this final rule.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report for this action to each House of the Congress and to the Comptroller General of the United States. Neither of the NESHAP amended by this action constitute a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

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

Michael S. Regan,
Administrator.

For the reasons set out in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is 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.*

Subpart QQQQ—[Amended]

■ 2. Section 63.4741 is amended by revising paragraphs (a)(1)(i) and (a)(4) to read as follows:

§ 63.4741 How do I demonstrate initial compliance with the emission limitations?

* * * * *

(a) * * *

(1) * * *

(i) Count each organic HAP in Table 7 to Subpart QQQQ of Part 63 that is measured to be present at 0.1 percent by mass or more and at 1.0 percent by mass or more for other compounds. For example, if toluene (not listed in Table 7 to this subpart) is measured to be 0.5 percent of the material by mass, you do not have to count it. Express the mass fraction of each organic HAP you count as a value truncated to four places after the decimal point (*e.g.,* 0.3791).

* * * * *

(4) *Information from the supplier or manufacturer of the material.* You may rely on information other than that generated by the test methods specified in paragraphs (a)(1) through (3) of this section, such as manufacturer's formulation data, if it represents each organic HAP in Table 7 to this subpart that is present at 0.1 percent by mass or more and at 1.0 percent by mass or more for other compounds. For example, if toluene (not listed in Table 7 to this subpart) is 0.5 percent of the material by mass, you do not have to count it. For reactive adhesives in which some of the HAP react to form solids and are not emitted to the atmosphere, you may rely on manufacturer's data that expressly states the organic HAP or volatile matter mass fraction emitted. If there is a disagreement between such information and results of a test conducted according to paragraphs (a)(1) through (3) of this section, then the test method results will take precedence unless, after consultation, you demonstrate to the satisfaction of the enforcement agency the formulation data are correct.

* * * * *

■ 3. Table 7 to subpart QQQQ of part 63 is added to read as follows:

TABLE 7 TO SUBPART QQQQ OF PART 63—LIST OF HAP THAT MUST BE COUNTED TOWARD ORGANIC HAP CONTENT IF PRESENT AT 0.1 PERCENT OR MORE BY MASS

Chemical name	CAS No.
1,1,2,2-Tetrachloroethane	79–34–5
1,1,2-Trichloroethane	79–00–5
1,1-Dimethylhydrazine	57–14–7
1,2-Dibromo-3-chloropropane	96–12–8
1,2-Diphenylhydrazine	122–66–7
1,3-Butadiene	106–99–0
1,3-Dichloropropene	542–75–6
1,4-Dioxane 123–91–1.	
2,4,6-Trichlorophenol	88–06–2
2,4/2,6-Dinitrotoluene (mixture)	25321–14–6
2,4-Dinitrotoluene	121–14–2
2,4-Toluene diamine	95–80–7
2-Nitropropane	79–46–9
3,3′-Dichlorobenzidine	91–94–1
3,3′-Dimethoxybenzidine	119–90–4
3,3′-Dimethylbenzidine	119–93–7
4,4′-Methylene bis(2-chloroaniline)	101–14–4
Acetaldehyde	75–07–0
Acrylamide	79–06–1
Acrylonitrile	107–13–1
Allyl chloride	107–05–1
alpha-Hexachlorocyclohexane (a-HCH)	319–84–6
Aniline	62–53–3
Benzene	71–43–2
Benzidine	92–87–5
Benzotrichloride	98–07–7
Benzyl chloride	100–44–7
beta-Hexachlorocyclohexane (b-HCH)	319–85–7
Bis(2-ethylhexyl)phthalate	117–81–7
Bis(chloromethyl)ether	542–88–1
Bromoform	75–25–2

TABLE 7 TO SUBPART QQQQ OF PART 63—LIST OF HAP THAT MUST BE COUNTED TOWARD ORGANIC HAP CONTENT IF PRESENT AT 0.1 PERCENT OR MORE BY MASS—Continued

Chemical name	CAS No.
Captan	133–06–2
Carbon tetrachloride	56–23–5
Chlordane	57–74–9
Chlorobenzilate	510–15–6
Chloroform	67–66–3
Chloroprene	126–99–8
Cresols (mixed)	1319–77–3
DDE	3547–04–4
Dichloroethyl ether	111–44–4
Dichlorvos	62–73–7
Epichlorohydrin	106–89–8
Ethyl acrylate	140–88–5
Ethylene dibromide	106–93–4
Ethylene dichloride	107–06–2
Ethylene oxide	75–21–8
Ethylene thiourea	96–45–7
Ethylidene dichloride (1,1-Dichloroethane)	75–34–3
Formaldehyde	50–00–0
Heptachlor	76–44–8
Hexachlorobenzene	118–74–1
Hexachlorobutadiene	87–68–3
Hexachloroethane	67–72–1
Hydrazine	302–01–2
Isophorone	78–59–1
Lindane (hexachlorocyclohexane, all isomers)	58–89–9
m-Cresol	108–39–4
Methylene chloride	75–09–2
Naphthalene	91–20–3
Nitrobenzene	98–95–3
Nitrosodimethylamine	62–75–9
o-Cresol	95–48–7
o-Toluidine	95–53–4
Parathion	56–38–2
p-Cresol	106–44–5
p-Dichlorobenzene	106–46–7
Pentachloronitrobenzene	82–68–8
Pentachlorophenol	87–86–5
Propoxur	114–26–1
Propylene dichloride	78–87–5
Propylene oxide	75–56–9
Quinoline	91–22–5
Tetrachloroethene	127–18–4
Toxaphene	8001–35–2
Trichloroethylene	79–01–6
Trifluralin	1582–09–8
Vinyl bromide	593–60–2
Vinyl chloride	75–01–4
Vinylidene chloride	75–35–4

Subpart QQQQQQ—[Amended]

■ 4. Table 1 to subpart QQQQQQ of part 63 is revised to read as follows:

Table 1 to Subpart QQQQQQ of Part 63—Applicability of General Provisions to Subpart QQQQQQ

As required in § 63.11432, you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) as shown in the following table.

Citation	Subject	Applies to subpart QQQQQQ?	Explanation
63.1(a)(1)–(4)	General applicability of the General Provisions	Yes.	
63.1(a)(5)	Reserved	No.	
63.1(a)(6)	General applicability of the General Provisions	Yes.	
63.1(a)(7)–(9)	Reserved	No.	
63.1(a)(10)–(12)	General applicability of the General Provisions	Yes.	
63.1(b)(1)	Initial applicability determination	Yes.	
63.1(b)(2)	Reserved	No.	
63.1(b)(3)	Record of applicability determination	Yes.	

Citation	Subject	Applies to subpart QQQQQQ?	Explanation
63.1(c)(1)–(2)	Applicability of subpart A of this part after a relevant standard has been set.	Yes.	
63.1(c)(3)–(4)	Reserved	No.	
63.1(c)(5)	Notification requirements for an area source that increases HAP emissions to major source levels.	Yes.	
63.1(c)(6)	Reclassification	Yes.	
63.1(d)	Reserved	No.	
63.1(e)	Applicability of permit program before a relevant standard has been set.	Yes.	
63.2	Definitions	Yes.	
63.3	Units and abbreviations	Yes.	
63.4	Prohibited activities and circumvention	Yes.	
63.5(a)(1)	Applicability of preconstruction review requirements.	No.	
63.5(a)(2)	Applicability of notification requirements	Yes.	
63.5(b)(1)	Requirements for newly constructed and reconstructed sources.	Yes.	
63.5(b)(2)	Reserved	No.	
63.5(b)(3)	Required preconstruction approval required for major source construction and reconstruction.	No	Subpart QQQQQQ does not regulate major sources.
63.5(b)(4)	Notification requirements for construction or reconstruction of area sources.	Yes.	
63.5(b)(5)	Reserved	No.	
63.5(b)(6)	Added equipment (or a process change) must be considered part of the affected source and subject to all provisions in the relevant standards.	Yes.	
63.5(c)	Reserved	No.	
63.5(d)	Application for approval of construction or reconstruction.	No	Subpart QQQQQQ does not require an application for construction or reconstruction.
63.5(e)	Approval of construction or reconstruction	No	Subpart QQQQQQ does not require application approval before construction or reconstruction.
63.5(f)	Approval of construction or reconstruction based on prior State preconstruction review.	No	Subpart QQQQQQ does not require approval of construction or reconstruction based on prior State preconstruction review.
63.6(a)	Compliance with standards and maintenance requirements.	Yes.	
63.6(b)(1)–(5)	Compliance dates for new and reconstructed sources.	Yes.	
63(b)(6)	Reserved	No.	
63(b)(7)	Compliance dates for new and reconstructed sources.	Yes.	
63.6(c)(1)–(2)	Compliance dates for existing sources	Yes.	
63.6(c)(3)–(4)	Reserved	No.	
63.6(c)(5)	Compliance dates for existing sources	Yes.	
63.6(d)	Reserved	No	
63.6(e)(1)	Operation and maintenance requirements	Yes.	
63.6(e)(2)	Reserved	No.	
63.6(e)(3)(i)	Startup, shutdown, and malfunction plan	No	Subpart QQQQQQ does not require a startup, shutdown, and malfunction plan.
63.6(e)(3)(ii)	Reserved	No.	
63.6(e)(3)(iii)–(ix)	Startup, shutdown, and malfunction plan	No	Subpart QQQQQQ does not require a startup, shutdown, and malfunction plan.
63.6(f)	Compliance with nonopacity emission standards	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(g)	Use of an alternative nonopacity emission standard.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(h)(1)	Compliance with opacity and visible emissions standards.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(h)(2)(i)	Compliance with opacity and visible emissions standards.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(h)(2)(ii)	Reserved	No.	
63.6(h)(2)(iii)	Compliance with opacity and visible emissions standards.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(h)(3)	Reserved	No.	
63.6(h)(4)	Notification of opacity or visible emission observations.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6 (h)(5)(i)–(iii)	Conduct of opacity or visible emission observations.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(h)(5)(iv)	Reserved	No.	
63.6(h)(5)(v)	Conduct of opacity or visible emission observations.	No	Subpart QQQQQQ does not contain emission or opacity limits.

Citation	Subject	Applies to subpart QQQQQQ?	Explanation
63.6(h)(6)–(9)	Availability of records and use of continuous opacity monitoring system.	No	Subpart QQQQQQ does not contain emission or opacity limits.
63.6(i)	Extension of compliance with emissions standards	Yes.	
63.6(j)	Exemption from compliance with emissions standards.	Yes.	
63.7	Performance Testing Requirements	No	Subpart QQQQQQ does not require performance tests.
63.8(a)(1)–(2)	Applicability of monitoring requirements	No	Subpart QQQQQQ does not require monitoring of emissions.
63.8(a)(3)	Reserved	No.	
63.8(a)(4)	Applicability of monitoring requirements	No	Subpart QQQQQQ does not require monitoring of emissions.
63.8(b)–(g)	Conduct of monitoring	No	Subpart QQQQQQ does not require monitoring of emissions.
63.9(a)	Applicability and general information for notification requirements.	Yes.	
63.9(b)(1)–(2)	Initial notifications	Yes.	
63.9(b)(3)	Reserved	No.	
63.9(b)(4)–(5)	Initial notifications	Yes.	
63.9(c)–(d)	Extension of compliance and special compliance requirements.	Yes.	
63.9(e), (f), (g)	Notification of performance test, opacity and visible emission observation, and requirements for sources with continuous monitoring systems.	No	Subpart QQQQQQ does not require monitoring of emissions.
63.9(h)(1)–(3)	Notification of compliance status	Yes.	
63.9(h)(4)	Reserved	No.	
63.9(h)(5)–(6)	Notification of compliance status	Yes.	
63.9(i)–(j)	Adjustment to time periods or postmark deadlines for submittal and review of required communications, and change in information already provided.	Yes.	
63.9(k)	Electronic submission of notifications and reports	No	Subpart QQQQQQ does not require electronic reporting.
63.10(a)–(b)	Recordkeeping and reporting requirement applicability and general information.	No	Subpart QQQQQQ establishes requirements for a report of deviations within 30 days.
63.10(c)(1)	Additional recordkeeping requirements for sources with continuous monitoring systems.	No	Subpart QQQQQQ does not require the use of continuous monitoring systems.
63.10(c)(2)–(4)	Reserved	No.	
63.10(c)(5)–(8)	Additional recordkeeping requirements for sources with continuous monitoring systems.	No	Subpart QQQQQQ does not require the use of continuous monitoring systems.
63.10(c)(9)	Reserved	No.	
63.10(c)(10)–(15)	Additional recordkeeping requirements for sources with continuous monitoring systems.	No	Subpart QQQQQQ does not require the use of continuous monitoring systems.
63.10(d)–(f)	General reporting requirements, additional requirements for sources with continuous monitoring systems, and waiver of recordkeeping or reporting requirements.	No	Subpart QQQQQQ establishes requirements for a report of deviations within 30 days.
63.11	Control device requirements for flares and work practice requirements for monitoring leaks.	No	Subpart QQQQQQ does not require flares and does not require monitoring for leaks.
63.12	State authorities and delegations	Yes.	
63.13	Addresses of state air pollution control agencies and EPA Regional Offices.	Yes.	
63.14	Incorporations by Reference	Yes.	
63.15	Availability of information and confidentiality	Yes.	
63.16	Requirements for Performance Track member facilities.	Yes.	

[FR Doc. 2023–04376 Filed 3–7–23; 8:45 am]

BILLING CODE 6560–50–P